Adjudications and Arbitrations

Volume 2 of 2 – [Road works]

09 Case studies of Disputes

Eng. C. Wijayaratna

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PREFACE

Eng. Chandarasiri Wijayaratna, graduated from university of Ceylon Katubedda campus [presently Moratuwa University] in1973 and commenced his Engineering career at Mahaweli Development Board. After six years, he joined private sector in consultancy services and construction companies and developed himself to a Construction Management Specialist as well as Arbitrator and Adjudicator.

I had opportunity to be associated with him as Dispute Adjudication Board [DAB] member and frequently to discuss the disputes to find most appropriate solutions.

During his career he always wishes to share his experience with his colleagues of young & old generations, in construction industry. He is very enthusiastic to disseminate his knowledge to young engineers, particularly in project management for their career development.

Most of the young and senior engineers encourage him to publish his wealth of knowledge in construction management, and dispute resolution, as guide lines to engineers in the industry.

As a result of these requests, he compiled his experience in simple and user- friendly manner to publish this book. All disputes in this book are real life dispute resolutions he faced, presented step by step for easy understanding of the reader. He was involved in almost all of these cases as consultant, arbitrator or adjudicator. This book contains analyses of situations to find solutions in appropriate manner.

This book is useful as a guideline, not only for Engineers but also for the quantity surveyors and contractors to enhance their knowledge to implement projects well.

Therefore, I am pleased to congratulate him for his dedicated contribution to construction industry to fill these gaps – a long term need.

Eng. Wimalasena Gamage

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C.Eng. HLF [IESL]; Past President of IESL
Retired Director of Irrigation [Major construction]
Arbitrator & Adjudicator

Foreword

My intention for writing this book is to provide an opportunity to the less exposed engineers in construction industry to understand the reality of possible failures in many claims, they may expect to win.

Under FIDIC 4 and ICTAD Publication No. SCA/1, revised edition January 1989, the time for a claim was not rigidly fixed. The phrases "or as soon thereafter as is reasonable" for extension of time and 'if the contractor has, at the earliest practicable opportunity, notified the Engineer in writing' for claims, was much used to submit late claims by contractors.

But under **new** FIDIC contract conditions this is not possible. A delayed claim will not be accepted by the Engineer and hence the dispute board or the arbitrator, if the other party objects. And in ICTAD though it is a must yet it is not stated that the entitlement is lost as seen from sub clause 19.1 different from the second paragraph of sub clause 20.1 in FIDIC [2015]

Disputes are not pleasant. However, if inevitable there is no other option than facing it.

If the party involved, studies carefully the disputes, which are less likely for a favorable decision, a dispute need not be referred for resolution by Adjudication or Arbitrator.

Dispute resolution is costly, time consuming and in my view is non-productive for engineers as they are trained to do more useful work for the society with their engineering capabilities, than making money for someone else.

However, situations do crop up, because the business world is not always reasonable in their dealings.

This book deals with resolutions of actual disputes; the author has associated with such disputes in the capacity of Resident Engineer assisting the Employer, or as a member of a dispute board or arbitration panel, or as an independent advisor to state sector employers when his colleagues sought his help.

A dispute being a private matter between the parties, should not be divulged to others.

Because of this reason it is very difficult to get a practical understanding, unless one gets an opportunity at least to read the submissions, proceedings and the decisions of a dispute resolution.

Accordingly, the author selects some [13] cases of which he has information in detail, to present each case as disputes between a Contractor, an Employer, associated with an Engineer decided by a dispute board or an arbitration panel. The time, location etc. of the project is not mentioned as most cases are on road projects. Where the parties involved may be identified by

guessing. **Thus, the author does not contravene the legal requirement on confidentiality of documents which are their private and confidential matters.**

Any clause quoted from specifications and contract conditions will be within inverted comas or/and in italics if felt needed to be included.

Decisions given may be different in similar disputes depending on circumstances – i. e. the specifications/contract conditions, submission and defense, supporting documents and the personal factor of the decision maker.

I estimably extend my gratitude to,

- Mr. Denzel Aponsu – the Resident Engineer under whom I worked as an ARE, where I had first experience on contractor's claims and the discussions, which first triggered an interest in this aspect of construction contracts in me, and
- the construction company [SGCC] which allowed me to study the whole set of documents of a previous arbitration they had, before I joined them, and
- the friends who sought my assistance as a senior engineer when they had dispute resolutions, and
- ICLP for selecting me for the diploma course after which I am recognized in this field.

I, fervently hope this book will be useful to those who are keen to peruse this as a guidance, in order to avoid disputes, which are unproductive in the long run.

This volume 2 contains of 9 disputes on road works and the volume 1 contains disputes on building works [03] and waterworks [01]

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25/02/2016 to 31/12/2023

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Chapter 1

The dispute:

There is no item in BOQ for trimming leveling and compaction of the original ground, before embankment construction. The contractor requested for a variation order. The Engineer refused stating that it is included in the item of embankment construction.

The background:

This is a road improvement contract under FIDIC- Multilateral Development Bank Harmonized edition June 2005 and general specification ICTAD publication SCA/5 of June 2009. There is no clause related to embankment construction under special specifications.

- The contract was awarded in July / X for a 540day period.
- The contractor requested this variation in September next year[X+1]
- The Engineer reasoned out why the work is not a variation in September X+1 itself
- The contractor replied back immediately.
- Matter was discussed at the progress review meetings and the Engineer did not change his stand.
- The Engineer replied to the contractor stating that, if the contractor disagrees, to take up next contractual action and no more correspondence will be made on the subject.
- The matter was referred to 'ad-hoc' Sole member DB after completion of construction.

The contractor's contention:

1. Referred to specification clause 304 for method of embankment construction.
2. "Spec. 304.3 (j) (i) and (ii) describes the method of embankment construction at locations where the existing embankment is sloped as is characteristic of this project. The method instructs "benching" which describes trimming & leveling of the slopes to form a horizontal plane, without which the embankment layers atop cannot be constructed. The sub grade is compacted as described under spec. 304.3 (e). These methods conform to the same carried out at site.
3. Spec. 304 .4 (b) breaks down the aforementioned specifications of construction for payment where the specified pay items are
   A. 304(2) – embankment construction using borrow material compacted in position [cu. m]
   B. 304(3) Trimming leveling & compaction of original ground [sq. m]
4. Although provisions in the contract provide for embankment construction, through BOQ items 3.4.1 [Embankment construction type I] and 3.4.2 [Embankment construction type II], payments for work pertaining to trimming leveling and compaction are absent

5. We understand that because of the specified “average end area “method of measurement [304.4(a)], fill and cut quantities the method of measurement for benching or trimming leveling and compaction are not reconsidered under embankment construction. Therefore, this work and quantities thereof, must be compensated under pay item 304(3)

The Engineer’s reasoning for not accepting the need for a variation order

1. Your attention is drawn to ‘item 5- Rates and sums to be for the work completed’ in preamble to the bill of quantities and in particular to paragraph 4 of item 5.
2. It states “*No claim will be considered for further payment in respect of any work or method of execution, which may be described in the contract or is inherent in the construction of the work and detailed in the drawings on account of,*
   (1) Any omission from the wording of the item or from a clause in the preamble or
   (2) No mention of such work or method of execution having been in the preamble”.
3. The paragraph 1 of item 5 is also applicable; “it is to be clearly understood by the contractor that the rates and sums, which he enters in the BOQ, shall be for the work finished complete in every respect. He shall be deemed to have taken full account of all requirements and obligations, whether expressed or implied, covered by all parts of the contract, and to have priced the items herein accordingly. The rates and sums therefore include, all incidental and contingent expenses and risk of every kind necessary, to construct complete and maintain the whole of works in accordance with the contract”.
4. From the above it is clear that trimming leveling and compaction of the original ground is to be considered as part of the embankment construction and as such your request for a variation order is not accepted.

The claimant / contractor’s response

1. We are of a different understanding of item 5 of the preamble to BOQ.
2. The preamble refers to “work” not “Works”.
3. The denoted pay item correlates the BOQ and specifications of the work via the following- 304 (2) a & b – embankment construction Type I & II.
4. Please understand that trimming leveling and compaction is differentiated as a separate work by the distinct pay item 304(3) in the specifications.
5. This item is not considered anywhere in the contract despite being instructed by the work.
6. If your statement that both these works should be paid under the same BOQ item **the general procedure** is to express it <u>as a pay item not denoted in the specification</u> and thus indicating a new or altered work description or a combination of the <u>two separate works</u> as you reason out.

7. All “expressed”, “implied”, “incidental”, and “contingent” works, methods or expenses therefore refer, to those of the individual work specified. It cannot refer to another work entirely.
8. Your argument is farfetched because any method of road construction is contingent to any item considered in the BOQ. Should an instructed new method or work be carried out at contractor’s expense without additional entitlement, because it is incidental to road construction?
9. The preamble further states “notwithstanding any limits which may be implied by the wording or the individual item and /or explanation in this preamble” and “*No claim will be considered for further payment in respect of any work or method of execution, which may be described in the contract or is inherent in the construction of the work and detailed in the drawings on account of*
   1) any omission from the wordings of the item or from the clause in preamble or
   2) No mention of such work or method of execution having been in the preamble”
10. Both sections give the same meaning and refer the costs pertaining to the directly incidental works and methods such as 1) site investigation 2) setting out etc. and also to those not mentioned such as allowances for the unstated overheads.
11. The preamble therefore is nothing new but only expresses the basics of cost estimation, as should be done and also to those not mentioned such as allowances for the unstated overheads.
12. We submit this for your reconsideration to issue a variation order

The Engineer’s reply

1. Our stand given in the letter dated 15 September is unchanged.
2. This matter was discussed at the last progress review meeting and the Employer agreed that there is no need to issue variation order
3. You may take next contractual action

DB member’s decision when referred to

“TRIMMING LEVELING AND COMPACTION, CLAIMED AS A MISSING ITEM IN THE BOQ AS PART OF EMBANKMENT CONSTRUCTION BY THE CONTRACTOR, **IS NOT A VARIATION**”

DB member’s reasons for the decision

1. The contractor requested for the variation order when 75% of the work is complete. The contractor should have given notice when the work commenced.

2. The contractor being an experienced contractor in road works would have easily noted this at the bid stage and clarified.
3. The contractor has not clarified his method of measurement of trimming leveling and compaction.
4. Also, it is noted that The contractor's rate for embankment construction is equivalent to the rates of other contracts under the same project

Lessons

1. If it is stated in the preamble for pricing that, the BOQ items given should cover the cost of the operation even though there are sub items under pay item for the work [in this case embankment construction] in specifications, the matter should be clarified at the pre-bid meeting. If the Employer does not issue addendum, rate(s) should be increased to cover the total cost of the that operation / item of construction
2. Notice should be given within 28 days of being aware of a situation for a claim. Before commencing embankment construction this notice should have been given and followed up with a claim. The contactor cannot say I did not notice this, because the contractor is supposed to read specifications and contract documents from the beginning of the work to follow it, not to see for claims, when the contractor feels that expected profit may not be made or, after a 'claim consultant' is engaged
3. It should be noted that, the DB Member's comment on contractor's rate is a hint to understand that DBM felt that the contractor is not really losing because of an unnoticed situation but the contractor tried a 'fast one' to earn some extra money using language.

Post script:

- The contractor informed dissatisfaction and requested for an amicable settlement from the Employer before taking action on arbitration.
- NEXT STAGE IS UNKNOWN TO THE WRITER

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Chapter 2

The dispute:

The Contactor asked for new rates for rock excavation using chemical agents in a road section on recommendation of Geological Survey and Mining Bureau [GSMB]. The Engineer has not instructed to use chemical agent for blasting, but obtaining mining license from GSMB is compulsory for rock blasting in any location.

The background:

This is a road improvement contract under FIDIC- Bank Harmonized edition June 2005 and general specification which is "Standard specifications for Construction and Maintenance of Roads and bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989". There is no clause related to rock excavation under special specifications.

- The contractor requested for new rates stating that use of chemical agent in rock excavation is not in the contract
- The Engineer reasoned out why the work need not be paid at new rates
- The contractor replied back
- 05 letters passed between the parties before the matter was referred to DB.
- The matter was referred to ad-hoc Sole DB member by the contractor writing to ad-hoc DB for a decision with a copy to the employer, after construction
- DB wrote to both parties and after their consent and gave the decision as both parties agreed that the documents submitted are detailed enough for a decision to be made without a hearing.

The claimant / contractor's contention:

1. We enclose herewith the report by GSMB regarding rock excavation in the project.
2. According to the recommendations there are some locations to use chemical agents for rock excavation.
3. This method is not in the original scope of the contract and hence a variation under clause 13 of "section VII -General conditions of contract" is applicable.
4. Therefore, we notify our intention to claim a new rate for rock excavation using chemical agent.
5. Contents of GSMB letter in brief;

- Following **recommendations** are given

No	Location	Observation	Recommended blasting method
1	00 to 1+160	Scattered boulders	Controlled blasting
2	1+720 to 1+780	Houses	Crack rock by cracking agent [chemical]

- Following **conditions** are given in permitting to carry out control blasting
  - i) Maximum bore hole length shall be <8 ft.
  - ii) Air compressor and jack hammer/[drill] can be used.
  - iii) Electrical detonators can be used.
  - iv) All blasting activities to be done under the supervision of a mining engineer.
  - v) Blasted rock should not be used for commercial purposes.
  - vi) Blasted rock and over burden should be dumped in approved places only.
  - vii) Explosives should be handled according to the guide lines of Assistant Controller of explosives.
  - viii) This permission is valid for 6 months only.

The Engineer's reasoning for not accepting the need for a variation order

1. There is no reason for variation under clause 13 in regard to rock excavation methodology.
2. Physical conditions of the site and location of housing or other buildings have not changed from the time of the bid.
3. Rate for rock excavation submitted should allow for any method of rock excavation that an experienced contractor would deem necessary to undertake the work in a safe and effective manner
4. BOQ does not define the method for rock excavation
5. In the event you wish the need to use chemical agent for rock excavation, it will be paid at the rate in the contract

The Claimant /contractor's response

1. Your statement that the BOQ does not define the method for rock excavation is incorrect
2. We draw attention to clause 301.3 (e) of standard specification. It has defined the methods to be adopted for rock excavation – quoted "*a uniform surface that could be easily drained shall be obtained by controlled blasting, sledging and splitting along cleavage plains"*

3. There is no indication in the specifications to use chemical agents for rock excavation.
4. It is agreed that the physical conditions at site have not changed from the time of bid.
5. But GSMB recommendation at the visit is, to use chemical agents when giving approval for rock excavation during the construction period.
6. Such visit was not arranged at the pre bid site visit.
7. Therefore, this is an unforeseeable physical condition of the site.
8. Therefore, we confirm our eligibility to claim new rates.

The Engineer's reply

1. Your reference to clause 303.3(e) of standard specification does not change the validity of the determination provided in my previous letter.
2. The method used to achieve above requirement in specification is up to the contractor to determine.
3. The use of chemical agent is a form of controlled blasting and certainly covers splitting along cleavage planes.
4. A key element of time allowed for tendering is for the contractor to undertake necessary site inspection and determine the physical conditions at site.
5. Your claim of unforeseen physical condition has no validity under this contract.
6. The Engineer's determination is unchanged as previously advised.

The Complainant / Contractor's next response

1. We suppose that the rock excavation with chemical agents is not covered under control blasting.
2. With the definitions of blasting involvement of explosives is necessary.
3. Also, the ground vibration and air blasts are main harmful environmental effects, which are to be concerned during blasting.
4. Herewith we submit some **definitions** for "blast", 'controlled blasting', "controlled blasting techniques" in mining engineering obtained from many sources
5. **The definitions**-

5.1 Blast

5.1.1 "The detonation of explosives to break rock" – The institute of quarrying-dictionary-B [online] available at htpp://www.quarrying.org/b.html

5.1.2 "The ignition of a heavy explosive charge" – Mindat.org(1993) Definition of blast-mindat.org/ glossary[on line] available at http.//www.mindat.org/glossary/blast

5.1.3 "A blast is a pre-defined area of the bench that is treated as a single unit for many mining purposes. Each blast is numbered and provides a means for personnel to refer a specific area. A blast may also be referred to as a shot" –

superpit.com.au(2013) glossary available at htpp.www.superpit.com.au/Glossary/tabid/73/Default.aspx

5.1.4 "Detonating explosives to loosen rock and before excavation"- miningonlineexpo.com (2011) Mining glossary, definition, definitions, define technical terms, mine, mill, extraction, aggregate, mineral, metallurgical processing-online expos. Available at htpp://www.miningonlneexpo.com/glossary.php/b.html

5.1.5 "The act of setting off the explosives is a blast. This has the effect of shattering all of the rock in a blast, which makes it possible for a shovel or loader to dig the rock and load to trucks" – superpit.com.au (2013) glossary. Available at htpp://www.superpit.com.au/glossary/tabid/73/default/aspx

5.1.6 "A planned explosion in mining" – Definitions.net (2013) w*hat does blasting mean?* Available at htpp://www.definitions.net/definition/blasting

5.2 Controlled blasting

5.2.1. "Techniques used to control over break and produce a competent final excavation wall"- mindat.org (1993) Definition of controlled blasting-mindat.org glossary. Available at htpp://www.mindat.org/glossary/controlled blasting

5.2.2 "Blasting patterns and sequences designed to achieve a particular objective. Examples include cast blasting and deck blasting" – miningonlineexpo.com (2011) mining glossary definition, definitions, define, technical terms, mine, mill, extraction, aggregate, mineral, metallurgical processing-online expos. Available at htpp://www.miningonlneexpo.com/glossary.php/b.html

5.2.3 "Controlled blasting is a technique of blasting for the purpose to reduce the amount of over break and to control vibrations. Following are the different types of controlled blasting techniques: Pre-splitting: this is an old but highly recognized technique with the purpose to form a fracture plane, beyond which the radial cracks from blasting cannot travel. Other methods include trim (cushion) blasting, smooth blasting, (contour or perimeter blasting) for underground mines and muffle blasting as a solution to prevent fly-rock from damaging human habitat and structures" – Technology.infomine.com (2007) Mine blasting and explosive technology and safety regulations/blasting-Techno Mine. Available at htpp://technology.infomine.com/reviews/blasting/welcome.asp?view=full

5.3 Controlled blasting techniques

5.3.1 line drilling

5.3.2 pre-split blasting

5.3.3 smooth blasting

5.3.4 cushion blasting

References: Dick R and Fletcher L, et.al (1982) Explosives and blasting procedures manual. Washington DC Dept. of Interior Bureau of mines

Gregory C E (1973) Explosives for North American Engineers Trans tech publications Cleveland Ohio

The Engineer's reply

1. Definitions on rock blasting has no bearing on the matter under discussion on rate for rock blasting.
2. Controlled blasting as specified in section 306 of specifications is one of the means of rock excavation. Others are sledging and splitting along cleavage planes or ripping.
3. The contractor may select any method for rock excavation.
4. The rate in the bid is to cover the cost of whatever method of rock excavation the contractor selects, not necessarily blasting.
5. The contactor had enough time to inspect and decide on the method(s) of rock excavation during the bid period.
6. If there was any doubt, clarification could have been made. But no query has been made at the time of bid.
7. The Engineer's determination that there is no basis for variation stands unchanged.

DB's decision when referred to

THERE IS NO GROUND TO ALLOW A VARIATION ON USE OF CHEMICAL AGENTS FOR ROCK EXCAVATION

DB's reasons for the decision

1. The priced BOQ has an item 3.1.2 Road way excavation in rock [pay item 301(2) and item 3.1.4 excavation in rock under earth drains [pay item 701(4)]
2. Preamble to BOQ page 7 item N0. 4, requires the contractor to give rate analysis for rock **excavation/blasting/including chemical blasting** referred to as BOQ item 3.1.2. **Hence the need to use chemical agents is not an unforeseen situation.**
3. There is no mention of rock excavation in special specifications and hence only the general specification is relevant in this matter.

4. Had there been any doubt the contractor could have clarified at the pre-bid meeting.
5. The contractor is bound by the contract document than letters by others.
6. GSMB letter gives use of chemicals as a recommendation but gives 8 other conditions on safety, use of excavated material etc. for their approval. So, use of chemical agents is not a compulsion on the contractor
7. So, the contractor has voluntarily selected use of chemicals instead of sledging, splitting along cleavage planes or ripping

Lessons

1. Method of construction is the contractor's choice. The Engineer can disagree on grounds of safety, public inconvenience or any bad effect on the finished product or any already finished work.
2. Before proceeding, with a claim, a claim notice or request letter on a variation, the contractor should first study, whether the Engineer has grounds to reject.
3. Bid rate is valid for the work as it is covered in the contract documents i. e. contract clauses, specifications, BOQ descriptions including preamble to BOQ, drawings and notes given in them.
4. If there is any ambiguity it should be clarified at the pre-bid meeting.
5. Once the contract is signed it is the Engineer who should clarify any ambiguity [refer general conditions of contract sub clause 1.5 priority of documents last paragraph]
6. If any party is not satisfied with the Engineer's interpretation/clarification the party can refer to DB as per the clause 20.4 in general conditions of contract.
7. There is no meaning in referring to DB when there is no ambiguity as in this case [see the DB's reasons above]

Post script: DB's decision was accepted by the parties

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Chapter 3

The dispute:

The method of measurement for the following items were disagreed between the parties

a) clearing and grubbing- plan area or sloping area

b) Road excavation- payment for clearing and grubbing is plan area or sloping area

c) Embankment filling – volume of fill for the layer removed for clearing and grubbing and excavation done in benching

The background:

This is a road improvement contract under FIDIC- Bank Harmonized edition June 2005 and general specification which is "Standard Specification for Construction and Maintenance of Roads and bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989".

The issues involve particular conditions of contract and particular specifications BOQ and its preamble.

The matter was referred to a sole adjudicator appointed after completion of construction.

- The contractor measured the clearing and grubbing area as a sloping area which is the actual ground situation.
- The Engineer disagreed and corrected it to be the horizontal plan area.
- The contractor claimed for the volume that need be filled caused by the removal of average 150 mm layer in clearing and grubbing for embankment fill volume.
- The contractor claimed for the volume that need be filled caused by bench formation.
- The Engineer disagreed and gave his interpretation.
- A few letters passed and **the contractor sought opinion of the DB**
- **Please note opinion; not a decision**
- DB's opinion may be accepted or not.
- Only a decision of DB is binding if one or both of the parties do not disagree **WITH REASONS within 28 days of receipt of the decision**

Relevant clauses of particular conditions specifications and the preamble will be shown in compound brackets in italics

{Sub ***clause 1.5 priority of documents*** *in general conditions of contract*

a) *The contract agreement*
b) *The letter of acceptance*
c) *The tender*
d) *The particular conditions part A*
e) *The particular conditions part B*
f) *These general conditions*
g) *The specifications*
h) *The drawings*
i) *The schedules and any other documents forming part of this contract*}

{**Special specification sub clause 90.20}**

Setting out, Cross Section Survey, and submission of Construction Drawings

90.20.1 Description of survey requirement

"The contractor shall be responsible for all survey and setting out work required by the clause and by Appendix 11. In addition, the contractor shall carry out any site survey works or obtain any additional survey details requested by the Engineer related to the works

The information provided by the contractor's cross section survey shall be the basis of the design for the works and shall indicate the details of the work to be given on the construction drawings that are to be issued to the contractor."}

*{Appendix **11***

Setting out, Cross Section Survey, and Construction Drawings

"The proposed rehabilitation works of roads will be based on the existing center line of the roads except where pavement widening on one side or widening of structures on one side occurs"

"Chainages shall be established, marked on site and recorded by the contractor during the setting out operations."

"On establishing the road center line and its appropriate chainages the contractor shall take information for producing plans, longitudinal section drawings and cross section information at 10 m intervals throughout road lengths."

".. in special cases such as sharp curves, as directed by the Engineer the 10 m interval shall be reduced to 5 meters" }

{Preamble ***to Bill of Quantities***

2. Method of Measurement

"The method of measurement of the works for payment shall be in accordance with the standard Specifications for Construction and maintenance of for "Standard specifications for Construction and Maintenance of Roads and Bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989"*., PART 2 Section VI-(b) and PART 2 Section VI-(c) Special specification or as specifically mentioned otherwise in BOQ."*

"Measurements in longitudinal direction for area or volume shall be taken along the center line of the road. For area of one meter or less, there shall be deduction for individual fixtures in the pavement. ***Measurements in transverse direction*** *for area or volume shall be taken* ***horizontally as indicated in plans or as ordered by the Engineer in writing"***

"While computing volumes for excavation, embankment and borrow, average end area method shall be applied and the intervals of sections ***unless specified shall be agreed by the contractor and the Engineer reasonably representing the shape"***

4. Rates and sums to bear proper relation to work described

"The rate and sums entered by the contractor against all items in the BOQ must bear a proper relationship to the cost of carrying out the works described in the contract; all on costs and similar charges which are applicable to the contract as a whole are to be spread over all the rates in the BOQ, whilst those which are applicable only particular sections of the contract are only to be spread over the items to which these sections refer.

However, the contractor shall ascertain the exact nature and extent of work to be performed by reference to drawings, Specifications, and Conditions of contract as the case may be."

13. Specification sub clause Nos. and Pay items given in BOQ

"For bills Nos. 2 to 6 the column pay item given in BOQ referred to the pay items relevant to the item of works given in PART 2 Section VI – (b) Standard Specification for Construction and Maintenance of Roads and Bridges -1989 issued by Road Development Authority of the Ministry of Highways, section 506 (asphalt concrete surfacing) Standard Specification for Construction and Maintenance of Roads and Bridges second edition June 2009 and PART 2 SECTION VI – (c) Special Specification of any item of works modified/revised or new item of works included" }

{*Special Specifications sub clauses – relevant*

"Sub clause 201 Clearing and grubbing

Delete

201 .2 work requirements

(b) Clearing and grubbing

(iii) Where the embankment fill is less than 3.0 meters all top soil shall be removed to an average depth of 0.15 meters except, where directed otherwise by the Engineer.

Insert

Specification clause 304 Embankment construction

"304.3 Construction requirement

Change heading "(c) Removal of top soil to read as "(C) sub grade preparation"

Delete 2 and 3 paragraphs and substitute the following

Where the embankment height is less than 300mm, the contractor shall excavate the natural ground to a depth of 300 mm and compact the exposed surface by either 4 -6 passes of an approved vibratory roller or other compaction equipment having the equivalent compaction effort of a 10 ton vibratory roller. The excavated depth shall then be filled with suitable compacted fill in accordance with the requirements given in sub section 304 .3 (d) and (e).

Where the road is in cut or where the roadway is to be widened, the finished sub grade shall be compacted at least to 95% of the modified maximum dry density to a depth of 150 mm. where this cannot be achieved due to the nature or condition of the sub grade soil, it shall be deemed unsuitable and shall be removed to a firm bottom or minimum 300 mm as directed by the Engineer, and replaced with suitable compacted fill as described above.

d) Placing and compaction of embankment material

Embankment fill shall be Types I or II, as specified in sub clauses 1708.1(a) and 1708.1 (b)

304.4 Measurements and payments

(a) Measurements – Delete paragraph 3

'The trimming leveling and compaction of original ground shall be measured in square meters'

(b) Payment add ii (a)

ii (a) Preparation of base of embankment to receive fill

Delete 'the pay items and pay units will be as follows' and replace with

The pay items and pay units will be as follows-

Pay item	*Description*	*Pay unit*
304(1)	*Embankment fill using selected fill material type II from roadway excavation*	*cubic meters*
304(2)	*Embankment fill using selected fill material type I from borrow*	*cubic meters*
304(3)	*Embankment fill using selected fill material type II from borrow*	*cubic meters*

The contractor's contention:

1. Clearing and grubbing- The contractor should be compensated for the actual work done
    - The cleared slope is a sloping plane and not a horizontal plane between the two edges of the cleared area, because the road widening fill is to be done on a slope. The road way excavation for widening has to be done on sloping ground though much steeper than at fills.
    - The sloping area is bigger than the horizontal area.
2. 150 mm layer removed for clearing and grubbing has to be filled back. This volume should be paid under embankment filling because the ground on which levels are taken is dug to this depth and has to be filled from borrowed material
3. Benching volume is also to be filled with embankment; hence it should be paid

The Engineer's reasoning for not accepting the contractor's contention

In one correspondence the senior **representative of the Engineer** [actual designation is not given to avoid the ease of guessing who the parties to the dispute are] has written to the **Engineer** his interpretation of specification clauses for corrections/acceptance in the form of a table. This table is given below with slight modification for clarity.

Reference	Specification in brief	Use and interpretation by Mr. X
Appendix 11 of special specification	The 2nd paragraph, 'on establishment of the center line the contractor shall take	This is considered as original cross section levels [clause 304.1 of spec.] or initial levels or actual cross

		cross sectional information at 10 m intervals and on sharp curves at intervals of 5 m. Such cross section should be plotted at 1: 50 horizontal and 1: 20 vertical scale	sections taken at site before construction [clause 304.4 of general spec.] Such actual or initial or before construction levels were taken as the basis for volume calculation of various work items
Section 300 general spec.	Sub clause 301.4	Roadway excavation to be measured in its original and the volume determined in cubic meters by the end area method as computed on original and final cross sections…….	Roadway excavation is measured between original and final levels include volumes of clearing and grubbing and hence for cutting to dispose; no clearing and grubbing is prescribed
Section 304 general spec.	Sub clause 304.3 (i). (i)	Where the slopes are steeper than 2 horizontal to 1 vertical benching slopes shall be carried out at regular intervals	All costs of completing works specified under **section 200 – site clearing** and **section 300 Earth works** shall deem to be included in the items provided in the BOQ and measured between initial or preconstruction levels and after construction levels irrespective of whether clearing and grubbing, benching etc. are ordered or not. No extra payment is made apart from clearing and grubbing but for the filling in the space created by clearing and grubbing or excavation in benching and filling on benches up to the original cross section are not separately considered The work specified in clause 304.3 (c) too should be carried out and the costs should be included in fill between original [or initial] levels and final design levels
	Sub clause 304.3 (c) special spec.	Where the embankment height is less than 300 mm the contractor shall excavate the natural ground to a depth of 300 mm, compact as specified and be filled with specified material	
	Sub clause 304.4 (a) and (b)	The embankment- fill to be measured and between actual cross sections taken at site before construction and after construction shall include setting out, benching slopes of existing embankments and hill sides, preparation of base to receive fill materials etc……	
We seek your final interpretation as the contractor argues that fill in between benching etc. should be paid separately at the rate quoted for embankment fill.			

The Engineer confirmed the representative's interpretation is correct

The Complainant /Contractor's response

1. We cannot agree with your interpretation.
2. Preamble to bill of quantity clearly stated that the method of measurement of "completed work should be done in accordance with the standard specifications" [first para under method of measurement]
3. Standard specification states in clause 201.3 (a) "Clearing or clearing and grubbing shall be measured separately on an area basis in square meters of area cleared and grubbed "
4. Clause 106.2 of standard specifications state, "Final levels shall be similarly recorded at the same grid points after completion of each item of work listed separately for payment *[*sub clause 106.2 does not have such sentence; may be the clause number given is wrong by the contractor – **Author***]*
5. The actual levels which are indicated in clause 304.4 of standard specification are not the initial levels taken to facilitate design work. Appendix 11 is referred to these initial levels and drawings which are considered for payment. Then levels should be recorded for quantity calculation of finished works when it is necessary.
6. According to general conditions of contract sub clause 1.5 'when there is a dispute' the specification prevails over the schedules. So, payment for the work has to be in accordance with the specifications. *[*'when there is a dispute' is not the term that should have been used "for the purpose of interpretations" is the phrase given in the clause- **Author]**
7. Clause 304.4 of standard specification says "Embankment construction shall be measured as compacted volume in cubic meters. The volume of fill material shall be computed by the average end area method on cross sections given in the drawings or on actual cross sections taken at site before and after construction of the embankment. Where the embankment foundation is likely to settle under the weight of fill, the extra volume of material required due to such settlement shall be included in the measurement."

The Engineer's reply

The Engineer confirms the interpretation given earlier is correct and contractual.

DB's opinion when referred for it

[Why the contractor sought opinion instead of a decision is unknown]

1. Clearing and grubbing area done in fill or cut areas **should be measured horizontally** in the transverse direction as given in "2. method of measurement" in preamble to BOQ

2. Layer removed for clearing and grubbing shall be considered for fill volume because it is removed but not for benching, as in field practice the excavated material in benching is not taken away

DB's reasons for the opinion expressed

1. Clearing and grubbing to be measured horizontally in transverse direction as plan area
   1.1 in Pricing preamble to BOQ it is so stated as method of measurement
   1.2 The contractor's contention was
      - The actual area should be measured as per specification clause 201.3 of general or standard specification
      - The actual area of clearing is a sloping area not an area in horizontal plane
      - The specification prevails over the schedules, of which BOQ is one and the pricing preamble is part of the BOQ.

   1.3 If the contractor's reasons are separately taken, they appear correct. But it should be noted that the specification does not explicitly say how measurement should be taken. The actual area of clearing and grubbing to be paid means only what is done has to be paid because, elsewhere in specifications it says end area method should be used to pay. If this statement is purely taken any gaps between the cross sections such as by roads etc. will also be paid.

   1.4 Though pricing preamble says transverse measurement should be horizontal of specification was explicit to record that the area should be the sloping area of actual land cleared and grubbed the contractor's contention of priority of documents will have to be selected discarding the method of measurement stated in the pricing preamble

   1.5 When different statements are in different sections of the contract documents, they should be selected as complementary, when not given explicitly. If two documents are explicit on any matter and contradicting, then the order of priority of documents should be considered.
2. The volume required to fill caused by removing a layer of 150mm or deeper as required should be paid but not benching
   2.1 "…….all top soil shall be removed to an average depth of 0.15 meters except where directed otherwise by the Engineer" is given in special specification sub clause 201.2

   2.2 This material is removed to a dump yard and any top soil is stockpiled for use in grass sodding.

   2.3 The clauses quoted by the Engineer do not state any other thing except that it should be end areas of initial and final levels taken for calculations.

2.4 The Engineer's argument that initial and final levels should be the boundary for fill irrespective of clearing and grubbing layer or benching, does not hold where extra volume of fill is mentioned to be paid for settlement of ground in preparation of the existing ground. But this cannot be measured unless levels are taken again or an assessed settlement depth is agreed. **So, 150 mm average layer excavation also can be agreed if the parties wish so.**

2.5 The sub clause 304.4 Measurements and payments of standard specifications says "the *volume of fill shall be computed by the average end area method or cross sections given in the drawings or on actual cross sections* ***taken at site before and after the construction of the embankment".***

2.6 Stress should be made on before and after construction of embankment. Clearing and grubbing is a separate item not a part of embankment filling as benching, which has been given as a construction requirement. So initial and final levels should be before embankment construction not before all construction works before which existing ground levels are taken before clearing and grubbing.

2.7 Taking initial levels before embankment fill after clearing and grubbing or marking the average 150 mm layer is a matter that should have been agreed by the parties

2.8 In this contract it is not stated under clearing and grubbing that the cost of filling of the layer removed in grubbing shall be included in the rate for clearing and grubbing. Hence the layer has to be filled under the embankment filling and so it should be measured to be included in embankment fill as the pay items shown if embankment filling type I from borrow & type II from roadway excavation and borrow.

2.9 Benching i. e. cutting the slope to make the new fill to bond well with the new fill is a part of embankment fill which is not to be paid. But the volume of fill required is normal fill volume not benching because under benching no filling is mentioned. However, in bench formation the contractor does not take away that soil to dump yard but put that earth too on to the fill and there is no need to do it. So, due to benching no extra filling does occur practically. **Therefore, benching should not be considered for an extra fill volume.**

Lessons

1. Anything explicitly given in any part of a contract document cannot be disregarded by any party or DB. If not clearly stated or there is an ambiguity, the Engineer should interpret and if not acceptable, it can be referred to DB. In this instance the matter on clearing and grubbing should not have been referred.
2. In normal situation, the DB is aware of the developments of the project from the beginning and he has to be paid extra for seeking an opinion to study the referred

matter and for writing his opinion. But here the DB being 'adhoc' he had to be paid, to study the contract documents too.

3. It should be noted here that, the contractor has taken joint levels after clearing and grubbing and before embankment fill which the contractor has not submitted in his referral to the DB. And DB considered only what has been referred to him.
4. In such a situation asking for opinion which is not binding is not a meaningful step taken by the contractor because, the Employer implemented the opinion on clearing and grubbing confirming his view; but did not pay for embankment fill – extra volume which is not advantageous to him. The DB opinion did not make any change to the payment process carried out thus far.
5. It should be noted that DB cannot disregard what is written in the contract document. He can interpret or give decisions on fairness and natural justice if and only if things are not clearly stated in the document. Where the document is clear and the DB has reasoned out, yet if the Engineer is not ready to be fair and reasonable and interprets contract document as he wishes, DB process is useless because **DB's opinion is not binding**
6. The contractor should plan immediately to follow with Arbitration which is binding and natural justice and fairness too can be sought in arbitration on matters not explicitly written in contract. But if the terms are wrong by unfair contract terms act No.26 of 1997, Arbitration can decide on fairness and natural justice. Also, those subject to section 24(4) of arbitration act 11 of 1995.

Post script

1. The Employer was silent on DB's opinion for months. The contractor questioned the situation
2. Then the Employer wrote that he does not agree with DB's opinion
3. In case of 'Adhoc' DB, one cannot say DB exists. If the DB is not requested by the parties there is no DB in place.
4. As DB's opinion is known on this matter, it is of no point in referring to DB again. However, later the decision was requested and DB confirmed his opinion as the decision.
5. So, the contractor informed the Employer that he will go for arbitration.
6. Further developments are unknown.

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Chapter 4

The dispute:

The contractor's request for new rate for cell type box culvert on change of design was agreed by the Engineer, after a few rounds of discussion and the Employer pointed out that the rate should not be accepted as there is an overall increase of cost for the cell barrel of the culvert, due to the change in the design issued by the Engineer.

The background:

This is a road improvement project engaging 5 contractors for different areas where some selected road improvements were undertaken. The contracts were under FIDIC- Bank Harmonized edition 2005 and general specification which is "Standard specifications for Construction and Maintenance of Roads and bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989". There is no relevance of special contract conditions or special specifications for the issues of this dispute.

Type drawing for Cell culvert was an over design. The Engineer with the concurrence of the Employer changed the section of the cell barrel and the reinforcement with new calculations done.

The modified [with other drawings] drawings for structures were issued to all the contractors at the beginning of the contract.

There was only one cell culvert to be constructed in this contract package as given in the schedule of culvert improvements given in the tender drawings. This list was modified to suite site requirement as it is commonly known to all 3 parties that, the information in this schedule in the tender is mostly inaccurate. In general, there was no disagreement of the necessary changes being introduced in a joint visit by all 3 parities. Accordingly, the number of cell culverts to construct, was increased

The concrete rates for the culverts were for concrete inclusive of form work.

Though it was common practice to get rate break ups of key items with the tender, it has not been done in this project, except for items where rates were considered unusually high or low.

When the Engineer asked for rate breakups for the key items at the commencement of the contract, this contractor disagreed. But he offered to submit in case of a situation of a variation only. As there was no clause to point out, to deny the contractor's condition, the Engineer agreed with the contractor's stand.

When construction of cell culverts was to start, the contractor pointed out the ratio of formwork to concrete is different and hence new rates are required.

The Engineer initially disagreed but later agreed and asked for his new rate based on existing rates.

The adjudication was an ongoing one from the beginning of construction

The contractor's contention:

There is no rate in BOQ for grade 25/20 concrete in cell culverts.

The Engineer's reasoning for not accepting the need for a variation order

BOQ item 5.10 and 5.11 are for culvert construction – head walls, capping beams, **deck slabs** etc. There is **a cell culvert in the culvert schedule** and the contractor was ready to construct a cell culvert for this rate. If not, the contractor should have questioned this at the pre-bid meeting.

The contractor's response

The culvert to be constructed was as in the type drawing STD/ X but the new drawing issued NTD/Y for single cell and NTD/Z or multiple cells had a different ratio of formwork to concrete and the rate should be modified.

The Engineer's reply

The Engineer agreed and asked for his rate break up and the new rate. On receipt the Engineer disagreed with the rate break up proposed and showed the formwork to concrete ratio should not be selected for one but for a few of the sections involved to use grade 25/20 concrete.

Development of the dispute

After receiving the 5 rate break ups, the Engineer corrected the rate break ups for concrete and formwork separately for head walls, capping beams, deck slabs considering the formwork surface required and the props etc. in each case and accordingly worked the rate for cell culvert, where the cell walls have forms in both faces. Then this was used to work the new rate for concrete including formwork as in BOQ.

When formal approval of new rates were sent for the Employer the overall cost increase was pointed out by the Employer

The Employer requested the Engineer to use BOQ rates as the formwork / concrete ratio for NTD drawings were within the range of the same ration in STD drawing for different components of work using grade 25/20 concrete

The contractor requested to use separate rates for formwork and concrete

The Engineer agreed but the rates proposed by the contractor were adjusted and given to the Employer to negotiate with the contractor.

As negotiations failed, after further correspondence, the Engineer was requested by the Employer to determine a rate

The Engineer fell back from his first stand and submitted a new rate, which is lower.

Issues raised by the parties:

When the matter was referred to the DB, the contractor & the Employer raised the following issues

A. The contractor's issues
    1. Are there items in the original BOQ for compensating for the construction of cell type culverts?
    2. If yes, what are those items
    3. Is the formwork to concrete ratio significantly changed in new type drawings [NTD] compared to that in original cell culvert drawings [STD]
    4. If yes, isn't it that there are no items in the original BOQ that could be applied to box type cell culverts built as per NTD drawings
    5. If issues 1 & 4 are answered in favor of the contractor, should the contractor be entitled to propose new rates for concrete in new type cell culverts inclusive of formworks

B. The Employer's issues
    1. Should the BOQ item E10 be used as the basis for arriving at a suitable rate for box type cell culverts?
    2. If yes, what should be the new rate

DB's decision:

The Engineer should use rates separately for formwork and concrete in works done under NTD drawings, for interim payments as provisional rates

1. The Engineer can derive a combined rate for concrete inclusive of formwork based on the analysis given and make a formal variation order
2. In the event the Employer's specific approval cannot be obtained,

a. The Engineer should withdraw NTD drawings and instruct to use STD drawings for future works and should make required adjustments for the scope to avoid exceeding the project cost.
b. The Employer should extend concurrence to the Engineer as described in 'a' above

DB's analysis and reasons for the decision

A. Contractor's issues

1. Issue No 1
   1.1. Concrete grade 25/20 in the BOQ items E10 & E11. The items are for capping beams, wing walls, culvert head walls and abutments for E10 and E11 is for extension of deck slab. Both these are rates for concrete inclusive of formwork. Therefore, there is no specific item rate for box culverts
   1.2. There is no record of raising this issue before the issuing of NTD drawings
   1.3. STD drawing shows type details of RCC box culvert. Section 'g', of work requirements of contract specifications, makes reference to box culverts in several locations
   1.4. Therefore, the contractor deemed to have accounted in the bid, for construction of box culverts as per STD drawings
   1.5. Accordingly with qualification that the box culverts do mean the box culverts built as per STD drawing
   So, the issue number 1 is answered in the affirmative
2. Issue No 2
   2.1 The relevant items are E10 & E11 of the BOQ
3. Issue No3
   3.1 NTD drawings are significantly different from STD drawing.
   3.2 Accordingly DB observes that the issue of NTD drawings in effect amounts to be an instruction for Variation within the meaning of sub clause 13.1 (c) of conditions of contract.
   3.3 The 5 rates submitted by the contractor for different work items, show different formwork /concrete ratios.
   3.4 The Employer has shown that the formwork /concrete ratio for NTD drawings fall within the range of the 5 different ratios for the STD drawing items.
   3.5 The contractor in his analysis showed that the formwork /concrete ratio for STD drawing is X1 and the same for NTD drawing is X2.
   3.6 The Employer's analysis shows Z2.
   3.7 A bidder will base his rates on a range of such variables, but the DB here will consider the average values i. e. r1 & r2 for STD and NTD respectively where r2 > r1

3.8 So, there is a significant increase of the ratio due to the issuing g of NTD drawings. Hence new rates are justifiable

4. Issue No 4

4.1 The contractor deemed to have accounted for grade 25/20 concrete inclusive of formwork in BOQ item rates for E10 E11 as per STD drawing

4.2 Therefore, there is no item rate in BOQ, that can be used for grade 25/20 concrete inclusive of formwork for work given in NTD drawings.

5. Issue No. 5

5.1 It is a basic principle in common law, that a contractor, who renders a service in conformity with a contract, is entitled for reasonable payment for the work/service performed. This should be followed unless the contract makes specific provision otherwise. The contractor has not elaborated his basis for the rates proposed. But on DB's query, he informed that sub clause 12.3 (b) of Conditions of contract [C o C] had been followed.

5.2 There are 3 conditions for deciding new rates

(i) Work should be a variation

(ii) There should not be an item in BOQ for such variation

(iii) No item in contract should be appropriate due to dissimilarities in character of work, or in work conditions

5.3 From the submissions, it is seen that both parties have treated this as a variation that needs new rates. They have treated formwork /concrete ratio as the parameter for change in the rate i. e. not similar in character as defined under sub clause 12.3 (b)

5.4 As such, the contractor has entitlement for new rate determined under the C o C, for works done using NTD drawing

B. The Employer's issues

1. Issue No. 1

1.1 According to sub clause 12.3, new rate should be derived normally from the existing rates with appropriate adjustment for the changed aspect.

1.2 BOQ items, E10 and E11 proposed for STD drawing, can be referred for this purpose.

1.3 So, the answer is in the affirmative

2. Issue No. 2

2.1 According to sub clause 13 the Engineer can instruct a variation in two ways
(a) by issuing an instruction
(b) by requesting a proposal for variation from the contractor. In this proposal by the contractor, he should include work description / time schedules, delay analysis [if any] and his analysis of new rate [sub clause 13.3]

2.2 The details to be included in the Engineer's instruction for variation, is not specified in the contract. However, considering the limitations in authority of the Engineer under sub clause 3.1 the Engineer has to examine all possible implications particularly the extra cost to the Employer and obtain necessary concurrence from the Employer, before issuing the variation.

2.3 The Engineer has not issued this as one given under sub clause 13.1; but the developments show that it had been considered by both parties, as an instruction with an implicit invitation to the contractor to respond.

2.4 The Engineer had examined the contractor's quotation and had proposed adjusted rates, for formwork and concrete separately and there had been discussions. However, the Engineer had changed their proposal subsequently, due to the disagreement by the Employer because of increased overall cost.

2.5 According to the last paragraph of sub clause 12.3, the Engineer has authority to determine provisional rates for interim payments until appropriate rate is agreed or determined. This should be done as soon as the relevant work item commences. Agreement of the parties is not a requirement for this. DB observed this provision in the clause gives effect to the fundamental principle that a party who renders a service is entitled to a reasonable evaluation.

2.6 Sub clause 3.5 requires the Engineer to consult each party and endeavor to reach agreement and make fair determination; in case agreement could not be reached.

2.7 The contractor's Claim states that the Engineer's determination has given effect to the Employer's desire of avoiding increment of project cost.
In this regard the following facts are relevant;

I. The Engineer suggested to the contractor to amend the rate break up, in such a manner to nullify increment of cost;
II. The Employer requested the Engineer to determination reasonable rates to pay for box culverts;
III. The Employer's office had proposed revised rates;
IV. The changed cost is an error and make the determination by making the varied rate identical to the rates proposed by the Employer.

2.8 It is observed that the sub clause 3.5 **infers the Engineer a distinguished position of regarding him to act fairly [without bias] in making determinations**, though in

general he is deemed to act for the Employer. **This is embodiment of the principle of natural justice**. ***Violation of such principle renders the administration decision null & void.*** **The determination of new rates proper ought to be made in fairness to both parties, by the Engineer as the professional contract administrator.**

2.9 The contract does not give any format / model for rate analysis or data for pricing. Therefore, if the parties have not agreed, the Engineer ought to make an objective approach by consulting industry norms or other appropriate document of authority in determining new rates.

2.10 Accordingly, the Engineer's determination to fix new rate subsequently, shall not be valid. Therefore, the Engineer is bound to review his determination taking into consideration all the relevant circumstances regarding the norms of fairness. It can be stated that splitting concrete and formwork, which will help measurement of actual quantities of formwork, will be the appropriate approach.

2.11 The contractor has already executed work under the old rate applicable for STD drawings. Therefore, new provisional rate should be worked out by the Engineer without delay.

2.12 This calculation can be done using E10 and E11 rates;

For example, Say,

Rate for gr.25/20 concrete per m3	= Pc
Rate for formwork per m2	= Pf
Formwork/ concrete ratio is	= r1 for E10
	= r2 for E11

Thus

Pc + r1*Pf = E10 rate

Pc + r2* Pf = E11 rate

r1 and r2 are the average ratios

Hence Pc and Pf can be found

2.13 These rates can be used as provisional rates to pay for the work done using NTD drawings separately for concrete and formwork.

Lessons

1. The Engineer should have been careful about the likely cost if rate break ups are not available for the affected items when changing tender drawings.
2. The economic design the Engineer proposed by doing additional work in design calculations and drawing preparation, had been a problem for one contract when the same has not caused such dispute with others in the same project.
3. As the DB has correctly pointed out the Engineer should have given the proposed drawing and asked for the contractor's cost, delays if any etc. before issuing the instruction to adopt the drawing in construction.
4. The Engineer should have determined the rate when the parties failed to negotiate and agree disregarding the suggestions and pressure by the Employer
5. Because of the overall cost increase, the Engineer should have opted to withdraw the instruction, which was issued with the concurrence of the Employer when the Employer pointed out cost increase.
6. The Engineer was exposed by trying to do something good but not being sharp at the right time.
7. Note should be made of the DB's comments on sub clauses 3.1, 3.5 and 12.3 under 2.2, 2.5, 2.8, 2.9 and 2.10 in his analysis and reasoning given in Employer's issue 2

Post script:

- Decision given by the DB was followed by the Engineer and subsequent cell culverts were constructed using STD drawings
- Higher rate for work done using NTD drawings was adopted

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Chapter 5

The dispute:

This dispute is on unfair imposition of Delay Damages [DD] by the Employer when the Engineer has allowed Extension of time [EOT] in a few stages, during the contract period and recommended some after the contract period, while construction was not complete. The remedy sought is to pay back the delay damages with cost, interest and any other concession the DB wishes.

The background:

- The contract was signed using FIDIC Bank harmonized edition of 2005 for exclusive use of JICA's borrowers under license agreement in 2008 between JICA and FIDIC. Specifications are ICTAD general specifications SCA /5 2009, with particular specifications written for the contract.
- The construction progress was not satisfactory throughout the construction period.
- The contractors [a group of them under different contracts for the same project components], were warned for delay by the Employer at a common meeting for progress review and informed of a dead line for completion and failing of which, delay damages will be imposed.
- This dead line fixing was before the expiry of the original contract period.
- By this time the relocation of water lines in a section was delayed by the NWSDB [water board] and the Pradeshiya sabha.
- Relocation was done after the contract period.
- When the contractor informed of delay in completion; he had been allowed to do the work and the contractor was instructed to redo these sections.
- A culvert widening too has been decided after the original contract period.
- The Engineer recommended EOT but the Employer was adamant on his dead line given and rejected the recommendation.
- Due to heavy rain shoulder material had been eroded in a steep slope with bends. This had been instructed for correction, using different material as a change of design

The contractor/Complainant's contention:

1. The deduction of Delay Damages is not after a notice under sub clause 2.5 of the contract conditions
2. The payment recommended by the Engineer was changed by the Employer forcing the Engineer to correct the Interim Payment certificate [IPC]

3. The recommended EOT by the Engineer is rejected by the Employer.
4. The final contract value is more than the original contract sum; so the contractor is entitled for more time.
5. Repair/relocation of water pipelines were delayed and hence completed road surface was damaged by water leaks and had to repair this after pipelines were corrected, later than the deadline given for completion of construction.
6. The notice to take over was informed on 16 Nov. to take over on 26 Nov. x+1.This is within the EOT recommended by the Engineer but refused by the Employer.
7. When the Engineer released the delay damages already deducted; the Employer ordered to impose DD by returning the IPC.
8. The letter sent by the Employer stating that the contractor shall not be entitled for any claim what so ever due to the extended dead line for construction, is a violation of "unfair contract terms act No 26 of 1997."

The Employer / Respondent's stand:

1. Delay Damages were deducted in IPC 18 because,
   At the progress review meeting on10/06/year x, following were agreed,
   - The Employer promised to extend the contract period to 17 September on contractor's request,
   - If the target is not met DD will be applied from the last EOT date approved by the Engineer;
   - This ex-gratia extension of time was given on condition that the contractor will have no entitlement for any claim what so ever on this time extension.
2. The decision at the above meeting on 10/06/x was confirmed by the Employer [who signed the contract] by a letter dated 22/06/x+1.
3. The Employer's intention to deduct DD was highlighted in the minutes of the meeting on 10/06/x as the progress was low.
4. The Engineer's certification of IPC 18 was returned because of repayment of DD was recommended, as refunding DD is wrong without granting extension of time for which the Employer has not consented.
5. The Employer has not extended the ex-gratia EOT beyond 17/09/x.
6. The Engineer has granted EOT due to extra work and adverse weather. <u>EOT for Unusual adverse weather during ex-gratia EOT period too has been approved by the Engineer for 10 days.</u> **<u>The Engineer cannot extend ex-gratia EOT period</u>**
7. EOT for quantity variation can be accepted if there were such drastic changes, because BOQ quantities are only approximate, as clearly given in bid documents. But no such claim was submitted by the contractor.

8. Ex-gratia EOT was given at the meeting on 10/06/x on conditions only. DD can be applied when those conditions are satisfied.
9. The site was taken over on 26/11/x with a list of balance work to be completed /corrected during Defects notification period [DNP].
10. EX-gratia EOT was given on sympathetic grounds to complete the project on the given extended date. So, the contractor has no right to object imposing DD. It is contractually correct.

The Contractor/Complainant's response

1. As per sub clause 8.7 of general conditions of contract, an Employer's claim has to be made under sub clause 2.5.
2. For a claim under sub clause 2.5 notice has to be given. No such notice had been given.
3. No determination had been given by the Engineer stating the amount to be deducted as DD, which is required under sub clause 2.5.
4. Had such notice been given, we would not have done work under variation such as repairing damages to asphalt surface caused by water leaks of pipe belonging to NWSDB and P. sabha.
5. These works were to be done after 10/06/x.
6. The Engineer by his letter dated 16/01/x has determined the contractor's entitlement of EOT up to 28/11/x and issued payment certificate accordingly.
7. As per sub clause 14.7 the Employer is obliged to pay the sum certified by the Engineer and issued payment certificate accordingly.
8. But the Employer violated this.
9. We consider EOT granted under any name is EOT and cannot be reduced as per contract conditions.
10. We construe the recommendation by the Engineer vide letter dated 16/01/x+1, as his determination which is suppressed by the Employer.
11. By letter gen / 163 dated 10 Nov. year x, we submitted our claim for EOT for 10 days, which was not accepted nor rejected by the Engineer. So, it is due to us.
12. Engineer by letter 4753 dated 20 /Nov. /x granted EOT for 10 days.
13. On 13 /August/x at an inspection, we were instructed to extend a culvert on both sides. We requested EOT for 31 days for this work, vide our letter 136 dated 23 /Aug, /x, assuming the extension will be given we carried out the work.
14. The Engineer recommended this EOT for 15.5 days, vide his letter 4923 dated 16/ Jan /x+2. By this time the work was over. We maintain that all 31 days are our eligibility.
15. At a meeting held on 11/ Nov. /x, we were requested to submit details to grant EOT for asphalt repair works. We claimed 9.5 days by our letter dated 29 /Dec. /x. This was granted by letter 4923 dated 16 /Jan. /x+2 by the Engineer.

16. Concrete shoulders were to be provided for a section for washed off areas in 01 kilometer, during October rains. We requested 17.5 days vide letter GEN/187 dated /29 Dec. /x. This was granted by the Engineer's letter 4923 dated 16 /Jan./x+2.
17. We requested 21.5 days for rain vide our same letter GEN/187 dated 29/ Dec. /x. This was granted by the Engineer's letter 4923 dated 16 /Jan. /x+2.
18. Accordingly, the Engineer has granted EOT to 28 /Nov. /x.
19. We have informed the Engineer the work is completed on 12 /Nov. /x +1. There is no delay to complete.
20. So, delay damages should not be deducted.

The Employer /Respondent's reply

1. The Employer had given notice by informing in several meetings during the period and the notice is also given and recorded. The contractor was sufficiently aware of the Employer's intention to impose delay damages from 17 September in year x.
2. Imposing Delay damages is well defined in contract conditions and a determination by the Engineer and reaching agreement is not necessary.
3. The construction is a process taking a length of time and not just one event. So, the letter 4353 dated 15/Jul./x issued by Engineer is a valid notice.
4. At the meeting on 10 /June/x, the contractor was made to know that DD will be applied, if he fails to achieve the given target. The contactor did not express disagreement to this condition at any time.
5. If he wanted, the contractor could have disagreed to do extra work stating the risk of not being able to meet the target.
6. The Engineer has no authority to extend the ex-gratia EOT given by the Employer.
7. We agree that the Employer has to pay as the Engineer has certified in Interim payments. But the Engineer cannot extend the Ex-gratia EOT to pay back the DD to the contractor.
8. The Employer need not refer to DB under sub clause 20.4 as the claimant stated, to refuse to make a <u>wrong</u> payment
9. The Employer did not force the Engineer, but informed to correct a mistake done by him to act beyond his authority.
10. The Engineer has not granted contractual EOT beyond 16/ Aug. /x; Ex-gratia EOT was given by the Employer.
11. The Employer rejected the Engineer's and Director's requests to grant EOT, i. e. to extend the ex-gratia EOT.
12. The Engineer's suggestion to extend time for extra work in a culvert repair was not accepted by the Employer.

13. The Engineer's suggestion to extend time for asphalt correction / repair was not accepted by the Employer.
14. The Engineer's suggestion to extend time for providing concrete shoulder was not accepted by the Employer.
15. The Engineer's suggestion to extend time for bad weather during this period was not accepted by the Employer.
16. The Engineer's suggestion to extend time for all up to 28/ Nov. /x was not accepted by the Employer.

DB's decision

It can be seen, that the claimant/contractor is entitled for

- part repayment of Delay Damages deducted
- interest for the excess deduction
- part cost of DB process

Accordingly, the cost of delay damages to be paid back is Rs. Rs. 6.3 million

The interest and cost of DB process should be calculated by the parties jointly as given and shall be settled in the stipulated time.

DB's reasons for the decision

[Annexes, attachments and appendix mentioned in this section are the support documents given by the parties; to keep privacy of the dispute these are not given in this book]

"Delay Damages [DD] are not levied without notice as stated by the claimant."

However, there is no notice proper as per sub clause 2.5. DB explained to the parties that a claim proper should

- Follow a notice, stating the event and the wish to make a claim
- The event should be followed within the stipulated time as per the contract clause
- The clause(s) under which the claim is based should be specifically mentioned
- The claim points should be established
- The relevant supporting document copies should be submitted

Though it is not a notice proper, some notice /intimation has been made twice vide letter dated 22/06/x by Employer [Appendix E] and letter 4353 of 15/07/x by the Engineer [submitted at the hearing]. Though the Engineer's letter heading is something else, in the last paragraph it is stated that the letter be considered as notice under sub clause 2.5. **Hence it cannot be a situation totally unexpected**.

1. 'Delay damages claim has not been submitted under sub clause 2.5 as stated in the second submission by the claimant dated 14 Feb. 2011.'

As seen from the proceedings of the second hearing issues,

- No.3. Did the Engineer issue a determination on Employer' claim for imposing DD? ---No clear determination was given
- No.4. Is notice given for claim No. 7 for EOT on weather condition within 28 days? ---No
- No.5 Was the claim No7 submitted within 42 days of the event----No
- No.6 Does this claim give all the particulars and relevant sub clauses of the contract conditions ----No
- No. 15. Has the contractor given notice informing under which sub clause he is doing so for culvert repair given lately? -- No
- No.16. Has the contractor established the time required for culvert construction as 31 days? – No
- No. 17. Has the contractor established the effect of this time on the approved construction program?- – No
- No.18. Has the engineer responded to the claim within 42 days as per the sub clause 20.1? --- No
- No.19. Has the Engineer mentioned determination is under relevant sub clauses [8.4 and 3.5]? --- No
- No.20. Has the contractor considered after 42 days the claim is rejected by the Engineer and acted as per paragraph 9 of sub clause 20.1? ---No
- No. 21. Has the contractor taken action under sub clause 20.4 as explained in sub clause 20.1 paragraph 9 --- No
- No. 22. Is there any sub clause in the contract conditions stating that if the Engineer failed to respond to a claim within 42 days of the claim, whatever is claimed by the party should be accepted? --- No comment by either party; the answer is NO

The parties or the Engineer on behalf of the Employer have not followed the contract conditions and clause requirement very correctly. But the parties have accepted the decisions and their results.

Therefore, the DB does not agree with the claimant's reasons to refuse the imposition of delay damages ***purely because a claim based on sub clause 2.5 has not been submitted***

2. 'Delay damages details are not given. Not as an amount; the amount is not given'

Though it has not been given as an Employer's claim with the amount and the basis of calculation as many other claims have been agreed in the process of this contract administration, facts and the intentions are expressed. The basis for DD is given in the contract document. The amount has to be decided. That is why a dispute has arisen. The DB is held to arrive at a reasonable amount based on available documentary records

So, **application of delay damages clause itself** cannot be rejected as unfair.

3. 'Ex-gratia extension of time is not as per the contract conditions and hence it is an action taken outside the context of the contract'
    - The decision had been taken on 10 /June /x; whereas the scheduled date of completion of the contract is 16 /June/x
    - So, it is an unwanted action taken when the contract
        a) could have been allowed to progress under delay damages which is not contrary to the conditions agreed under the contract
        b) after notice to correct, time should have been given and allowed the contractor to show his commitment, failing which termination under clause 15 is legal and contractual
        c) Could have been terminated on poor performance after notice to correct

    - It is recorded in the proceedings that the Employer proposed ex-gratia Extension of Time.
    - There was no record of the Engineer advising for or against it.
    - As per contract, determination of Extension of Time [EOT] should be by the Engineer under sub clauses 8.4 and 3.5
    - The change introduced in particular conditions of contract sub clause 8.4 has no effect on the general clause on this matter.
    - <u>The decision by the Employer to give ex-gratia EOT is a condition imposed by a person who has **no authority under the contract.**</u>
    - <u>So, it is a non- binding condition under the contract creating an unwanted situation for the contract administration.</u>
    - Although the Engineer has sole authority under the contract to determine EOT under sub clause 8.4, the limitations of the Engineer's authority [sub clause 3.1] too shall be illustrated here.
    - <u>"</u>*The Engineer shall obtain the specific approval of the Employer before taking action under the following sub sections*
        a) Sub clause 4.12 [unforeseeable physical conditions]
        b) Sub clause 13.1 [right to vary]
        c) Sub clause 13.3 [variation procedure]
        d) *Sub clause 13.4 [payment in applicable currency*]"
    - It should be noted that sub clause 8.4 is not included in the list under sub clause 3.1. HENCE SPECIFIC APPROVAL OF THE EMPLOYER **is <u>not needed for EOT</u> determination by the Engineer.**
    - Under the same sub clause 3.1(b) it is stated "The Engineer has no authority to relieve either party of any duties obligations or responsibilities under the contract".
    - <u>It should be well understood that completion of the contract **as agreed** is an obligation of the contractor.</u>
    - <u>So, the Engineer cannot change the date of completion on his own.</u>
    - EOT [with reasons] is relieving the contractor's obligation of completing on time.

- The Engineer gets his authority as per contract, when he is appointed as the Engineer for the contract.
- The Engineer's appointment is made by the Employer.
- So, the Engineer's authority is given by the Employer.
- As termed, sub clause 3.1 is, to describe the Engineer's duties and authority,
- Duty means actions to be taken by a person for which he is responsible
- Authority and responsibility go together; no one can be made responsible for which he has no authority to act
- So the limitation of authority to relieve from an obligation of a party on reasonable grounds, can be resolved by consent of the parties i.e. the Employer because the contractor's consent is there as he has made the request for EOT
- It should be clearly noted that consent is not approval
- Approval requirements for the Engineer are listed above under the same sub clause 3.1
- Not obtaining the Engineer's recommendation and not considering the Engineer's recommendations by the Employer are acts beyond the authority under the contract.
- **This situation has given a legal right to the contractor to challenge the course of action taken in the so- called ex-gratia EOT.**

So, the DB considers the **ex-gratia EOT** granted is not valid under the contract and **will disregard it completely.**

DB will consider other matters on imposition of delay damages.

4. 'Conditions imposed in ex-gratia EOT is unfair and applicability of unfair contract terms act No.26 of 1997 for this contract '

The contract is to be executed under the laws of the country. The Act is part of law in Sri Lanka. Thus, it is applicable to this contract too. However, the Act gives when & where the Act is not applicable. Under those sections of the act, construction contracts are not included. So, it should be applicable.

The 'ex-gratia conditions' are unfair as it stated that "the contractor cannot make any claim what so ever"

But after the ex-gratia EOT the contractor had made claims and these are evaluated by the Engineer and decisions are given favorably and other wise depending on circumstances. So practically the condition had not been implemented. Hence, the contractor's rights under the contract have not been affected and no injustice is done.

So, this matter is not relevant

5. ‘Deduction of Rs. 8.90 million as delay damages [DD] shall be paid back’

‘It was recorded that the contractor failed to complete the contract on schedule. Therefore, it is correct to impose delay damages. Notice under sub clause 2.5, has been discussed under 1, above’

The Engineer has recommended EOT on unusually unfavorable weather and other reasons at three different times. [Appendix G of statement of claim, - not attached in this book]

- 38.6 days were recommended for unusual adverse weather as first EOT and new date of completion is 24 /July/x vide letter 0018 dated16/June/x [Appendix F]
- Second EOT for various reasons other than weather from 30 April and approved date of completion is changed to 03 /August/ x vide letter -0019 dated 27 /June/x [Appendix G]
- Third EOT on unusual adverse weather had been granted by the Engineer for 13 days and the new date of completion is 16/ August/x+4, vide letter –0020 dated 03 /October /x [Appendix G]

These had been accepted by the Employer. **So, the last date of completion accepted by the parties as per contract is 16 /August/x**

‘The ex-gratia EOT conditions have been applied to impose delay damages’

- It had been agreed the Employer granted ex-gratia EOT till 17 September [03 months from the scheduled date of completion] as per minutes of meeting on 10 /June /x.
- The contractor failed to complete by 17 September as agreed at the meeting on 10/ June /x.
- So, DD had been imposed from 16 /August/x.
- IPA 19 was submitted for the period ending 30 /November/x. The Engineer’s certification recommended DD which had been deducted in IPC 17 and IPC 18 to be repaid – IPC grand summary [Appendix B1 of contractor’s statement of claim for DB process (SOC)].
- IPC 19A had been issued by letter No -4980 on 11/ February/x+1, re-introducing DD [Appendix B2 of SOC].
- The justification given for these deductions is given as contractor’s failure to reach the target of 17 September and the condition imposed with the ex-gratia EOT.

Therefore, DD deduction is legitimate **under the conditions imposed with ex-gratia EOT approval**.

But **the ex-gratia EOT is disregarded by DB**.

The fairness or reasonability of the imposition of DD will be analyzed later in this document

6. Requests of EOT and the Engineer's determinations and recommendations

6.1 Weather and new instructions

EOT has been recommended and granted by the Engineer up to 16 /August /x on unusual weather and other reasons and was **accepted by the Employer**

The Employer's representative vide' his letter GEN dated 12/12/x, had written to the Employer requesting for 10 days on weather conditions to extend up to 27 /September/x+4, stating that the Engineer has **assessed this** additional time.

The contractor had informed the Employer by his letter No. GEN/48 dated 16 /02/x+1 with the heading completion date that EOT for 37.5 days requested had not been received by them for extra work without a copy to the Engineer.

This is wrong correspondence. Contractually the Engineer is authorized to grant EOT. The contractor should have addressed the letter to the Engineer with a copy to the Employer. If the Engineer does not respond after reminders the contractor can take action under disputes clause as per sub clause 20.1. So, the letter given in appendix C does not help the claimant in any manner under this dispute resolution

But the Engineer has recommended further extension of ex-gratia EOT for instruction issued vide letter -4923 dated 16 /January/x+1 in further submission (reply) to SOD by the claimant to DB dated 23 /October/x+1].

Relevant contents of the Engineer's above- mentioned letter are as follows

" 1. On account of instruction issued on 3/ August /x for extension of culvert at 3+140 15.5 days

1. On account of pavement rectification of damages caused due to water leaks 9.5 days
2. On account of time taken for damages to shoulders and other works due to rain 17.5 days
3. On weather from 17 September [last ex-gratia EOT date] to 08 November /x+5 20 days

So, the last recommended **date for extension of ex-gratia EOT is 28 /November/x**".

This recommendation of weather has to be examined as the contractor has given 14 day notice to **take** over **as 12 November,** vide' letter GEN/161 dated 8/ Nov. /x in clarifications and documentary proofs arising of SOC addressed to DB dated 13 /Oct./x+1

- Attached in the later submission as support documents to letter GEN /187 dated 29 /December /x
  - i) There is no record as to when the shoulder correction was instructed other than in contractor's letter 187 dated 29 /12/x+1

ii) It has been noted in letter GEN /156 dated 29 October by the contractor, the attached weather record signed by the contractor and the TO of the Engineer, there are 7 consecutive dry days from 10 October.

iii) It is observed in the attachments for letter GEN /182 dated 19 December by the contractor to CRE, rainfall records show rainfall intensities below 30 mm even and raining period 01 hour after 4 pm.

iv) **In the wet zone of Sri Lanka, these cannot be considered as unusual rain**. Under the contract conditions only unusual bad weather can be considered. However, DB will not reassess the rain as the Engineer who has seen the actual site situation has allowed 20 days- not all the days listed in the records by the contractor

v) In the sheet signed by the ARE annexed to the same letter, Soil shoulder work is affected from 14 September and also the last date of rain recorded in the approved days affecting work by ARE is 29 October.

vi) So, the contractor knew before 14 September that the shoulder corrections are to be done. So as per **available records** the date to commence these works can be considered 14 September.

vii) The contractor's letter GEN /157 dated 29 October, states that they are claiming for both concrete and soil shoulders; Soil shoulders are already completed from 0+112 to 2+095 in 07 separate sections

viii) Therefore, it will not be correct to assume the identification of shoulder correction location was done on 29 October as reported in letter No. 187 of 29 /December /x, which is written after handing over of the contract on 26 /November/x

ix) DB accepts the assessed 20 days of rain from 17 September to 8 November by CRE as correct [ref. -4923 dated 16 /January/x+1]

But the DB has used these to find the effect of all to fix the possible final completion of the project

It should be noted that this recommendation is to extend the ex-gratia period which the Employer has not considered.

6.2 Increase in the contract sum

The claimant in his narrative 3.7 of statement of claim [SOC] refers to increase in the contract sum by about 8 million.

- Contract sum will not be exactly as estimated.
- A small increase need not be considered; no person can make an accurate estimate. The limited accuracy is stated in the preamble to BOQ.
- If there is a substantial change it can be considered. Contract sub clause 8.4 (a) allows for this.
- But as referred, the 'appendix J' does not show an increase but a decrease.

So, there is **no justification for extra time on change of quantity**.

6.3 Disturbance by water pipe leaks

However, there is record of disturbance for work by the water board activities and the Engineer had assessed the time effect of these vide letter 4923 dated 16 /January/x+1 though the Employer has not consented by hanging on to the word ex-gratia.

Also, it should be noted that 2 items of rectification to pavement and shoulders were not complete on the date of joint inspection for taking over and were allowed in the outstanding list. So, these 26 days [9.5+17.5] need be considered reasonable as EOT for the contractor. Taking over certificate is issued under letter No. -0021 dated 05 December 2009 with a two page list of outstanding work observed during a joint visit on 26 /November /x, vide' letter dated 13 October to DB by the claimant and same letter copy handed over by the Respondent at the hearing held on 04/ Jan /x+2]

Following items are of importance to the matters arisen in the dispute

Location	Description
1+600LHS	Need to finish water board repair
2+900 LHS	Repair asphalt depression with slurry seal
3+160 to 180LHS; 3+670 to 740RHS; 3+630 to 6+660;3+695 to 740 R; 3+770to 810 L; 3+980 to 4+090 L; 3+900 to 4+030 R	Hard shoulder repair
Note: These being allowed to complete in Defects Notification Period [DNP] the EOT granted for water board damage repair and shoulder correction have to be reduced. DB will have to make discretionary assessment as the total work and the balance work quantities have not been submitted in detail by the parties i.e. 02 days off water board damage repair; 07 days off shoulder correction work	

7. 'Recommendations by the Engineer to the Employer and the Employer's Representative to the Employer '

The Employer's Representative- Director vide his letter GEN dated 12/12/x quoting the proceedings of a provincial steering committee meeting, proposed 10 days of EOT on weather from 16 /August/x . He states in his letter "*Accordingly the Engineer has **assessed** the contractor's claims received on the following contracts and their recommendations for additional days reported are as follows"* [Appendix L of SOC]

The Engineer's representative –**recommended** extra time due to unusual weather for 20 days vide his letter 4923 dated 16 /January /x+1 [Appendix I of SOC] where it is stated *"… The effect of adverse weather prevailed from 17 /September /x to 08 /November /x have been assessed to 20 calendar days.*"

So it is seen that the Engineer is involved in both recommendations of 10 and 62.5 (=15.5+9.5+17.5+20) days

As the words **'assessed and recommended'** are used; it is clear that the Engineer has analyzed and determined these 72.5 days and recommended. **So, the Engineer's recommendation should not be disregarded by the Employer**

However, DB will examine the EOT recommended after 16 August [last date of agreed EOT by the parties]

Also, the Engineer has recommended repayment of the delay damages deducted on reasons of fairness which he has changed due to the directions/concerns of the Employer's representative

8. The Employer's refusal to accept the Engineer's recommendations on EOT for bad weather during ex-gratia EOT period i. e. after 16 August [Engineer recommended date] up to 17 /September/x

The whole matter revolved round the word Ex-gratia.

DB under item 1 of this section of this document has clearly shown that, the ex-gratia matter is outside the contract and beyond the authority of the Employer under the contract

Had the contract been administered under the normal contract conditions, this dispute would not have arisen.

If the Employer does not agree with a recommendation of the Engineer, the Employer may seek clarification from the Engineer

If the Engineer informs that his recommendation is after analysis and **is a determination** then the Employer can refer to DB as per contract condition sub clause 20.4

The Employer has no authority to instruct/direct the Engineer on any course of action, which is under the authority of the Engineer as stipulated under the contract conditions.

The Employer's approval is required for 4 counts only under sub clause 3.1

The Engineer's determinations come under sub clause 3.5 and a revision can be obtained under clause 20 [claims, disputes, and arbitrations] only.

DB's analysis

Extension of time [EOT]

- Scheduled date of completion is 16 /June/x9
- Revised date after first EOT is 24/ July /x
- Revised date after second EOT is 09 /August/x
- Revised date after third EOT is 16 /August/x

- Delay damages are imposed from 16 /August/x <u>because of a condition offered with the ex-gratia EOT given by the Employer</u>

Thus, the Engineer has recommended 10 and 36.5 days from 16 /August/ 2009 for unusual weather and for culvert construction instructed during extended construction period. [Section 5 under DB's reasoning]

As DB has disregarded the ex-gratia EOT as contrary to conditions of contract, EOT not considered to impose delay damages from **16 August to 26 November, too should not be accepted.**

<u>EOT that will be considered correct by the DB is only those recommended by the Engineer. **DB has reduced 02 and 07 days as explained in 6.3 above of this document.**</u>

<u>DB has analyzed the effect of these different EOT periods from 16 August [last date of completion accepted by both parties] to 26 November [date of taking over].</u> **See attachment excel sheet**

So, the date of completions shall be 29 October as per attachment

<u>Therefore, the Delay damages deducted up to 29 October shall have to be repaid.</u>

1. Fixing the Date of taking over

Official date of taking over [with a remarkable list of outstanding work] is recorded as 26 /November/x. This was accepted by the parties at the proceedings.

Note should be made that the taking over has been with a list of outstanding works. Of this, there were locations of incomplete water board damage repairs and shoulder work redone after flood damage [see 6.3 above]. Hence 01 day per each location of shoulder and 02 days from damage for water pipe leaks repairs have been deducted from the EOT allowed for this considering the concession given to complete during DNP.

However, the contractor has requested for taking over on 12 /November/x. <u>So, it is clear that the 20 days rain as recommended by the Engineer is not necessary from 8 November to complete the works</u>

2. Delay damages

- Delay damages deducted is Rs. 8.90 million
- This amounts to maximum delay damages of 5% for 100 days
- Delay damages per day as per contract is 0.05% of accepted contract sum i. e. 89,000.00

Delay damages should be imposed from 29 /October/x+2 to 26 November i. e. 29 days [see attachment 3 of DB's decision excel sheet]

The amount of delay damages shall be 29 @ 89000.00 = Rs.2, 581,000.00

So, the deducted excess amount to be repaid = 8,900,000.00 – 2,581,000.00	**= Rs. 6,319,000.000**

3. Calculation of interest

The interest shall be paid from the **date the deduction is made** up to the **date of DB decision** [19/08/x+2]

Considering the procedural delay, the DB decides the payment can be made **before 01 /October/x+2**

If the payment is delayed the claimant /contractor shall be eligible for the interest for the period from the date of DB decision up to the date of payment

Deduction of delay damages has been recorded on two days in the submitted certificate copies.

Date for deduction– 11/02/x+1 [date of IPC 19A; letter No. -4980];

period for interest calculation is from 11/02/x+1 to 19/08/x+2	= 555 days

The rate of interest shall be 3% + the discount rate of central Bank of Sri Lanka as per sub clause 14.8 of conditions of contract

THE PARTIES SHOULD

- FIND THE CENTRAL BANK REPORT FOR THE RELEVANT PERIODS AND SELECT THE INEREST RATE *and*
- **Jointly work out the amount to be paid**

Cost of adjudication

As per DB agreement the cost should be shared by the parities equally

DB considers both parties are responsible for the dispute

a) Had the contractor completed the contract on schedule there would not have been a dispute
b) Yet the contractor had genuine reasons for delay which he has failed to establish and win EOT
c) Had the Employer followed the Engineer's recommendations there would not have been a dispute
d) The Employer should not have acted beyond vested authority under the contract, especially during the contract period on 10 June when the date of completion is 16 /June /x
e) Due to the Claimant/Contractor not submitting all support documents at the hearing No.1 in Colombo and asking for additional submissions, there was a need for the hearing No.2 in Kandy

So, the DB determines that the cost should be shared by the claimant and respondent equally

The total cost of DB is unknown. The parties have not informed their costs in the submissions or during the hearing.

So, the known cost is the fee and transport of the DB member + Cost paid to the ICLP center+ cost of holding the second hearing- organized by the Respondent.

The parties should Share the known cost equally

1. "Any such other amount" the DB considers

Though the claimant pleads for any such other amount the DB may consider, there is no such matter except the restriction on price fluctuation mentioned in letter -0019 dated 27 /June /x. However, it has been noted that this was not imposed and price fluctuation had been paid

Thus, the DB decides that there is no other matter arisen in the submissions or during the proceeding to consider for fair compensation for the claimant / contractor

Lessons

1. When decisions are taken and informed to the other party, it should be checked whether the action to be taken is within the authority of the relevant person.
2. **The Employer should not get involved in contract administration.**
3. The Engineer may inform the Employer to make decisions when required e. g. making Employer's claims etc.
4. If the Employer does something unwanted with regard to the contract, the Engineer may write explaining it to the Employer **without a copy to the contractor.**
5. The Employer should always listen to the Engineer and clarify matters from him before taking action.
6. If he thinks the Engineer is wrong, he can refer to DB for opinion or decision depending on the circumstances.
7. The Contractor should be serious about the program he has given for construction.
8. He should monitor every month whether he is on schedule or behind by more than 5% and review his methods, not to allow the gap between the program targets and progress achieved, to increase.
9. If the reasons for delay are beyond him, notice of claim should be given as per contract and claims should be submitted as stipulated in the contract.
10. To do this, an experienced knowledgeable person should be engaged at site or to visit the site frequently enough to identify problems.
11. If it is costly to find such a person, an advisor should be found and **doubtful situations should be referred to him without delay.**
12. **Always effort should be made for amicable settlement as it does not involve extra cost and interest payments.**

Post script: Parties accepted DB's decision

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Chapter 6

The dispute:

The wearing course of the road is 50 mm thick asphalt concrete. Thickness tolerance allowed is ± 6 mm. There was a separate tolerance allowed for unevenness. Payment had to be done on volume basis. If the thickness was within tolerance work is accepted. Also, there was a provision to pay full value, if the thickness was not less by 10% of the specified thickness. Tolerance of unevenness too had to be acceptable for payment. One contractor was careful to avoid any low thick sections at all and found at the end of the day that he has used more asphalt and was unhappy of others in the same project, being paid full for low thick work within acceptable values. He argued that payments are to be made by the volume, considering the thickness found by core tests.

The background:

This is a road improvement contract under FIDIC- Bank Harmonized edition 2005 and general specification which is "Standard specifications for Construction and Maintenance of Roads and bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989". There is no relevance of special contract conditions **but special specifications were relevant for the issues of this dispute.**

There was an error in the special specification due to some numbering error of the sub clauses and a few lines were missing in the photo copy issued to the contractors. Therefore, the reference numbers in BOQ and the specifications were not matching.

Unit for Measurement given in the BOQ was [m3] cubic meters despite special specifications indicating payment by the [m2] meter squares.

In interim payment application, the contractor had claimed for volume by multiplying the area by core thickness of each 100 m lane width, as cores were to be taken at 100 m minimum interval for each lane width. This had been paid initially, if the core thickness was within tolerance limits for thickness and unevenness; but was changed when the specifications were referred by RE.

The contractor tried to raise this after a major part of the works were over to call that the measurement method shall not be changed because of this.

Contractor's contention:

1. Interim payments were made on volume basis as in the BOQ.
2. Specification 506.6 requires payments to be made on area basis
3. When the thickness of the asphalt is varying it is more appropriate to use the core thickness and area to calculate volume and pay on volume basis as given in BOQ
4. As payments were made in volume for actual thickness basis at the beginning, it can be continued

The Engineer's stand:

1. The specifications prevail over the BOQ, according to the order of priority of the contract documents.
2. The mismatch of the specification is an ambiguity and can be interpreted by the Engineer.
3. Corrections can be made subsequently of any interim payment made.

DB's decision when referred to:

The volume of asphalt layer should be computed for valuation under bill item 4.15, as described below;

a) When actual measurement [height] of the core lie between 45 mm and 56 mm [both inclusive] the thickness of the area represented by such core shall be 50 mm.
b) When actual measurement [height] of the core is less 45 mm the thickness of the area represented by such core shall be the actual value.
c) When actual measurement [height] of the core lie outside 44 mm and 56 mm, the area represented by such core shall not be considered for payment under the contract.

Issues raised by the parties:

A. Contractor's issues
    1. Is there proper specification given for calculating asphalt concrete [AC] volume.
    2. If there is no proper specification, should the contractor and the Employer jointly agree for a method of measurement?
    3. Does the description give, for BOQ item 4.15 state the AC wearing course surface compacted in position [measurement by cutting cores]
    4. If the issue No. 3 is answered in the affirmative, should the compacted thickness as determined by cutting cores, be taken into consideration for calculating volume?
    5. What is the specified compaction thickness?
    6. What are the tolerances specified for AC surfacing?
    7. How many cores are to be cut per day or quantity of square meters laid?
    8. Can the accepted area of AC be calculated from approved drawings?
    9. Can the surface having a compacted thickness between 44 mm and 56 mm be considered as acceptable?
    10. If the issue No. 9 is answered in the affirmative, should the volume be calculated using actual core thickness within 44 mm and 56 mm?
    11. If the above method is accepted for measuring the work done, are both the Employer and the contractor reasonably and fairly compensated, for the work accepted and executed respectively by them?
    12. If the Engineer's method of measurement is agreed to by the Employer, does the Employer agree to accept sub-standard work at a higher value?
    13. What are the criteria to be adopted, when the thickness is less than 44 mm and above 56 mm which is not within available limit?

B. **Employer's issues**:
The Employer did not raise any issue

Relevant specification clauses are given in italics

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104 GENERAL RULES FOR MEASUREMENT AND PAYMENT

Insert two new Para at the end of last Para as follows.

All measurements shall be taken of completed works after ascertaining their acceptability. Only works accepted by the Engineer shall be measured for payment. Works pending acceptance shall not be paid in full. A lesser percentage, to be decided by the Engineer in consultation with the employer, may be paid for works pending acceptance, provided the Engineer is satisfied that the contractor will finally complete these works satisfactorily.
Quantities for making payments on completed works shall be computed in accordance with the provisions made for the respective items. In the event of any situation where such compliance is not possible a decision of the Engineer should be obtained.

106.1 Lead for Material

Delete this sub section and insert as follows.

No additional payment will be made for haulage or transport of any materials. The contractor's rate quoted for each item should include for procurement, transport and incorporation of it in to the works and all incidentals there to.

106.2 Measurement for Area and Volume Based Payment

(a) Area basis

Para one - Insert a sentence at the end of the Para as follows. "As a minimum, one check shall be done for each 500 Sq. m area after compaction of each layer."

106.3 Scope of Rates for Different Items of Work

Delete this sub section and insert it as follows.

The rates quoted by the contractor for each item in the bills of quantities (BOQ), shall be the full compensation to carry out all works required to be done with respect to that item, including for providing all material, labour, equipment, transport, temporary works, wastage, overheads and for meeting all obligations and risks arising out of the conditions of contract or any other contract document and for meeting all legal requirements of the country. It shall also include for any shoring and dewatering where required, and not provided otherwise.

This sub section shall apply to all items of work in this contract irrespective of whether it is mentioned under any item or not.

106.4 Facilities for Verification of Measurements

Para one - Delete the words "officer of the client organization' at the end of Para one, insert the word "Engineer" in its place.

Insert a new subsection as follows:

106.7 Units of Measurement

All dimensions shown on the drawings stated in the specifications or on the bills of quantities are in the metric system, and this system shall be used throughout the contract.
Any reference to measurements in any of the submissions such as reports, construction drawings etc. to be made by the contractor to the Engineer or the Employer shall be in the metric or the S.I. system

506.6 Measurement and Payment

Delete this sub clause and insert as follows

Payment for asphalt concrete surfacing shall be based on the area of each layer satisfactorily laid and accepted by the Engineer. Area to be measured shall be the area stipulated in the drawings or as otherwise determined by the Engineer and instructed to the contractor. Any additional areas laid for the convenience of the contractor shall not be measured for payment. At junctions, the length of the connecting roads shall be measured to the extent shown on the drawings and the widths shall be as stipulated therein. The width shown on the drawings shall be the top width of the road surface. The edges of the asphaltic pavement layers shall be sloped 45º or, less steep. Thus, the bottom width of the top layer and the widths of the underneath layers have to be wider to cater for side slope. The contractor shall consider this and any other similar conditions that are likely to arise when estimating for pricing of the rates.

Deficiencies in thickness of the wearing course shall, unless an overlay is constructed at the Contractor's expense, result in a proportion only of the wearing course area being measured for payment. Proportions shall be determined in accordance with the thickness deficiencies and area proportions described below.

Thickness of asphalt concrete wearing course shall be determined by average caliper measurement of cores, rounded upwards to the nearest mm.

Paved sections to be measured separately shall consist of each 100 m. section in each traffic lane. The last section in each traffic lane shall be 100 m plus the fractional part of 100 m remaining. Other areas such as intersections, entrances, crossovers, ramps, etc. shall be measured as one section and the thickness of each shall be determined separately. Small irregular unit areas may be included as part of another section.

One core shall be taken from each section by the Contractor at approved locations and in the presence of the Engineer. When the measurement of the core from any paved section is not deficient by more than 5 mm from the specified thickness, the core will be deemed to be of the specified thickness as shown in the drawings.

When the measurement of the core from any paved section is deficient by more than 5 mm but not more than 15 mm, 2 additional cores spaced at not less than 25m and as decided by the Engineer shall be taken and used together with the first core to determine the average thickness of such section.

When the measurement of the core from any paved section is less than the specified thickness by more than 15 mm, the average thickness of such section shall be determined by taking additional cores at not less than 5 m intervals parallel to the centerline in each direction from the affected location until, in each direction, a core is taken which is not deficient by more than 20 mm. Exploratory cores for deficient thickness will not be used in average thickness determination.

Any deficiencies in the total thickness of wearing courses shall be subject to a proportional reduction in the area of wearing course measured for payment. Alternatively, the Contractor shall construct all at his own expense, a wearing course overlay, if practicable in the judgment of the Engineer. Any such overlay shall be a minimum of 40 mm compacted thicknesses and to the specified standard of the course it is overlaying.

All cores cut on the surface shall be properly backfilled with asphalt concrete of approved quality and compacted using a suitable rammer at Contractors' cost.

Table 506-7 Deficiency in thickness of wearing and binder courses

Deficiency in thickness as determined by cores	*Proportionate area for payment*
0.0 to 10.0	*100*
10.1 to 20.0	*80*
20.1 to 30.0	*60*
31.1 to 40.0	*40*

(b) Payment

Payment for asphalt concrete Surfacing will be made at the Contract unit rate for the item as measured above. The price shall be full compensation for furnishing all materials, for mixing and placing of the mixed material and for providing all plant. Machinery, equipment, tools, labour and incidentals necessary to complete the work to these Specifications.

The Pay Item and Pay Unit will be as follows:

Pay Item	***Description***	***Area***	***Thickness Deficiency***	***Area for payment***	***Pay unit***
506(1)	*Asphalt Concrete Surfacing (State compacted thickness)*				***Sq.m.***
506 (2) (b)	*Asphaltic Concrete surfacing compacted in position (measured by cutting cores)*				*Cu.m.*

DB's analysis and reasoning:

1. Is there proper specification given for calculating asphalt concrete [AC] volume?

1.1 The specification concerning measurements and payments of asphalt concrete [AC] surfacing is embodied in sub section 506.6 of special specifications [S.S] between pages 151 & 152. This sub section has been introduced, by replacing the corresponding sub section of standard specification [STD. S]

1.2 The section under heading 506.6 (b) – payment in page 152 within the section 506.6 of S.S contains, two pay items namely, item 506(1) with the pay unit as sq. m. and item 506 (2) (b) with the pay unit as cu. m.

1.3 The sub heading 506.6 (a) - measurements, which appears in STD.S is missing in the S.S. [The phrase 'as measured above 'appearing in section 506.6(b) is to be understood to refer to that former section, where the heading is missing. The same will be referred to, as subsection 506.6(a) somewhere here in below for convenience].

1.4 The 1st, 2nd, and 8th paragraphs and table 506 -7 under sub section 506.6(a) are exclusively addressing to the area measurement. The 3rd, 4th, 5th, and 7th paragraphs speak of schemes of measurements and determination of thickness without making reference to any pay unit.

1.5 The method of measurement is specified, within the 1st paragraph under sub section 506.6 (a), whilst the method of measurement of thickness is specified in 3rd paragraph. The description given in the pay item 506.2(b) reads AC surfacing compacted in position [measured by cutting cores] and it corresponds to the assumption given with BOQ item 4.15.

1.6 The contractor's statement that the specifications do not provide an explicit method for calculating the volume, may be only construed to mean that the sub section 506.6 of S.S does not patently describe that, the volume of AC laid is to be calculated, using the measurement of the area, and the corresponding thickness as determined by cutting cores.

1.7 The thickness determined can be used, to compute the percentage reduction as per given table 506 -7, as well as to compute, the volume for the purpose of the BOQ in item 4. 15. **The DB is not aware of any rules of interpretation, which would support the proposition that, the sub section 506.6 of S.S is improper, or irrelevant for the purpose of computation of volume of AC surfacing**.

1.8 There are certain infirmities with sub section 506.6 of S.S, which are not relevant for this issue and such have been addressed elsewhere in the DB's decision.

1.9 As far as computation of volume of AC surfacing is concerned, the sub section 506.6 of S.S contains sufficient provisions.

1.10 Therefore, the issue is answered in the affirmative

2. If there is no proper specification, should the contractor and the Employer jointly agree for a method of measurement?

2.1 The answer to the issue is to be made, on the hypothesis that, there is no appropriate specification for computing the volume of AC surfacing.

2.2 The phrase 'the contractor and the Employer jointly agree' is understood to mean creating a separate agreement for a method of measurement.

2.3 The common law provides for making and amending contracts when parties voluntarily agree. Yet I have been unable to find provision(s) in the contract compelling the parties to amend the same contract under any circumstance.

2.4 Accordingly, the answer to the issue is in the negative.

3. Does the description given, for BOQ item 4.15 state the AC wearing course surface compacted in position [measurement by cutting cores]

3.1The description of the BOQ item no. 4.15 reads 'Asphalt concrete wearing surfacing compacted in place [measured by cutting cores]

3.2 Therefore, the issue is answered in the negative.

4. If the issue No. 3 is answered in the affirmative, should the compacted thickness as determined by cutting cores, be taken into consideration for calculating volume?

4.1 The method of measurement of the compacted thickness is specified in the 3rd paragraph of sub section 506.6 of S.S. In the determination of the compacted thickness, certain special provisions given in the 5th paragraph shall apply.

4.2 It is common knowledge that the volume can be calculated by using the measurements of area and thickness.

4.3 Therefore, the issue is answered in the affirmative.

5. What is the specified compaction thickness?

5.1 In terms of the 5th paragraph of the sub section 506.6 (a) of S.S, the specified thickness is to be shown on drawings. The relevant drawings were not made available to the DB.

5.2 However, some documents submitted by both parties furnish sufficient evidence in this regard.

i) Specified thickness is 50mm.

ii) The tolerance limit for AC surfacing is ± 6 mm and hence core thickness should be 44mm to 56 mm both inclusive.

5.3 Accordingly the issue is answered by stating that conclusive evidence to the effect that the specified thickness is 50 mm.

6. What are the tolerances specified for AC surfacing?

6.1 The sub section 1601.3 of S.S, is plain and clear to the effect that the thickness of AC surfacing, as well as levels of asphalt surface, shall not be beyond a tolerance limit of ± 6 mm.

7. How many cores are to be cut per day or quantity of square meters laid?

7.1 The 5th paragraph of sub section 506.6 (a) of S.S. states, that 01 core shall be taken from a section. The 4th paragraph describes section as 100 m of a lane width and a contiguous area of special features, with the exception that irregular or small areas may be treated as a part of a separate section.

8. Can the accepted area of AC be calculated from approved drawings?

8.1 Approved drawings or any other data pertaining to AC surfacing have not been furnished in the evidence. However, the following facts /materials can be useful in fixing opinion on the issue.

8.2 The contractor himself stated that specifications are very clear, if payment was based on area basis. That implies that the ambiguity or doubt was because the pay unit was given in cu. m. The contractor was paid for volume of AC surfacing compacted in place using area and the core thickness from the beginning.

8.3 The contractor himself says that the volume should be calculated for the area and the actual thickness of the core.

8.4 The 1st paragraph of the sub section 506.6 (a) of S.S, states that the area to be measured should be the area stipulated in the drawing or **as otherwise determined by the Engineer.**

8.5 The contractor is to use the measurement of accepted works as made pursuant to subsection 12.1 of C o C, for computation of his entitlements in payment applications.

8.6 So, the issue is answered by stating that there had been no difficulty in ascertaining accepted area of AC surfacing laid.

9. Can the surface having a compacted thickness between 44 mm and 56 mm be considered as acceptable?

9.1 From the answers to the issue 5 & 6, the specified thickness of AC surfacing is 50 mm with a tolerance of ± 6mm.

9.2 So, the issue is answered in the affirmative

10. If the issue No. 9 is answered in the affirmative, should the volume be calculated using actual core thickness within 44 mm and 56 mm?

10.1 The contract specifies acceptance criteria of works, in terms of the work content and in terms of the dimensional accuracy. The relevant criteria for AC surfacing are specified in section s 1601 and 1602 of section g work requirement /specifications.

10.2 Once work [or part] is accepted by the Engineer, the contractor accrues his entitlement for measurement and valuation of the same, under the sub clause 12.1 of C o C.

10.3 In the case of AC surfacing the scheme for measurement and payment is governed by the sub section 506.6 of S.S. It elaborates a scheme that is different to which the contractor suggests within this issue. The following observations pertain to the relevant provisions in this regard

i) In the case of area- based measurements, when the thickness deficiency is not more than 10%, the area for payment will suffer no deduction [1st line of table 560-7]. As such where specified thickness is 50 mm a layer of 45 mm will qualify for payment.

ii) At the same time table 560-7 does not recognize any percentage when the thickness is more than specified. Thus, the intention of the specification [implied] is that there will be no additional payment for any thickness more than the specified.

iii) As such when thickness is equal to or greater than 45 mm it will be accepted for full payment, as when the specified thickness is 50 mm.

iv) There is a condition to the effect that, when a core is not less than 5 mm of the specified thickness, it deems to be specified thickness. This does not refer to either pay unit. Therefore, it is a general requirement. It perfectly agrees with the 1st line of the table 560 -7, when the specified thickness is 50 mm.

v) On the above premise, any thickness between 45 mm and 56 both inclusive will be deemed as 50 mm for the purpose evaluation of AC surfacing for payment for both pay units.

vi) There are no such conditions for determining thickness when measured core thickness is less than 45 mm. Thus, the term 'measured by cutting cores' as contained in the description of pay item 506. 2(b) should bear its plain meaning.

10.4 Accordingly the issue is answered in the negative.

11. If the above method is accepted for measuring the work done, are both the Employer and the contractor reasonably and fairly compensated, for the work accepted and executed respectively by them?

11.1 The phrase 'above method' is to be understood to mean computation of volume using actual core thickness and measured area when the former is between 44 & 56 mm.

11.2 Contracts are deemed to be formed with meeting of minds of equals, and they are bound to give effect to the terms as contained in the contract. As to the reference to fair compensation, no evidence of precedence or any other material of authority, have been furnished to the DB by the contractor to establish the applicability of the principles of equity, to override the provisions of the contract that they consider unfair.

11.3 DB observes that the unfair contract terms act [No. 26 of 1997] of Sri Lanka has no application on this matter.

11.4 DB is of the view that the standard forms for contract when developed with the consensus of all concerned sectors in an industry, will best respond to the norms of equity. The relevant standard form in Sri Lanka is the ICTAD [CIDA] publication SCA/5. The method suggested within the contractor's issue No. 10, is different to the method specified in SCA/5.

11.5 Accordingly, the issue is answered in the negative

12. If the Engineer's method of measurement is agreed to by the employer, does the Employer agree to accept sub -standard work at a higher value?

12.1 This issue is understood to make reference to the method i. e. the thickness between 45 and 50 being treated as 50 mm

12.2 As discussed within the answer to issue No.10, full payment is certified when the thickness is between 45 and 56 mm

12.3 The instant issue can be answered in the affirmative, only the supposition that the phrase 'substandard work' means the AC surfacing with thickness less than 50 mm [not less than 45mm]. It also shall be added that the contractor's proposition contained in this issue applies equally in respect of the area- based method which received the contractor's own admiration.

13. What are the criteria to be adopted, when the thickness is less than 44 mm and above 56 mm which is not within available limit?

13.1 The acceptance criteria in respect of dimensional accuracy [sub section 1601.3 of S.S] does not permit any thickness of AC surfacing below 44 and above 56 mm for acceptance, when the specified thickness is 50 mm. Such work should be treated as non- conformity in respect of workmanship and will be rejected under sub clause 7.5 of C o C. The Engineer has no authority to relieve a party from his contractual obligations [sub clause 3.1 of C o C]. Therefore, such work should not be measured for payment.

13.2 The issue is answered by stating that AC surfacing outside 45 and 56 mm thickness should not be accepted and measured for valuation.

NB:

This section 506.6 of S.S, is replacement of sub section 506.6 of STD. Specification of ICTAD [CIDA] publication SCA/5

Under paragraphs 6 & 7 of sub section 506.6 (a) of S.S and within table 506-7 there is recognition of non-conforming work to be measured. These provisions may be useful in a contingent situation when the Employer elects himself to accept such work.

There are infirmities in the new section introduced in Special Specifications; especially its recognition for measurement of work which are non-conforming to acceptance criteria

specified in the same document elsewhere. There would be ambiguities with the said sub section 506.6 if the specified thickness is different from 50 mm.

However, because the specified thickness is 50 mm in this case, the infirmities of the sub section does not have an effect on the matter of this dispute

Lessons

1. Contract documents should be carefully prepared. Cutting and pasting from a previously used contract document will be easy, but mismatches are possible and these should be looked for, very carefully before finalizing the document.
2. The DB has stated these very well in detail. Please refer to the underlined sub paragraphs of "DB's analysis and reasoning" and what the writer has extracted from the DB's report and shown as NB in a separate cage
3. The contractor tried to use the payments made by the Engineer for actual core thickness above 50 mm at the beginning without carefully studying the specifications which is not good for the Engineer as a professional. He may have just signed the QS prepared interim payment certificate. But it is good for the RE to spend more time on those items when an item comes for the first time in IPC.
4. Contractors should always remember that the interpretation of any contract clause is the authority of the Engineer not the contractor.
5. Matters should be referred to the DB, if and only if the claimant is double sure. If not, it is a matter of waste of time and money

Post script:

The parties accepted the DB's decision

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Chapter 7

The dispute: Delay in quarry approval by state authorities causing EOT

A road construction Contractor applied for a 'Type A' quarry license by upgrading a type C quarry in operation for more than 10 years in a forest department land, by signing a joint venture [JV] agreement with the quarrying company. The process took about 01 year and the production was stopped at different times by different government authorities. The contractor requested

a) Extension of time [EOT] for 250 days on this delay and
b) To reimburse additional royalty imposed by the forest department, for which the Engineer and the Employer disagreed.

The background:

An international bank funded project engaged a Joint Venture contractor under bank harmonized edition of the contract conditions of FIDIC 2005

A Joint Venture contractor [A&B] in a major road construction project, which consisted of a few other contracts in different districts, signed a joint venture contract with a quarrying company in the vicinity of the site, forming JV [A&Q]. The lead partner A only signed the JV agreement with Q, to produce and supply all quarry produce for the construction works for which the contractual commencement date is, November in year x. Before signing formal JV agreement, the company Q applied for a 'Type B' quarry license. The quarry site was in forest department land near a place with archeological remnants, but not declared as an archeological site.

The construction period was such that, the production rate of a 'Type C' quarry is not enough to meet the 'quarry produce' required for the construction works. The need for a 'Type A' quarry license was a practical decision made by the contractor.

The 'Type B' quarry license was received after the signing of the JV agreement between A&Q in the name of Q but the JV requested for type A license in January x+1and obtained a 'Type A' license in March x+2, after about 01 year

Following government authorities are involved in issuing quarry license.

i) Geological survey and mining bureau – issuing the license for quarrying
ii) Central Environmental authority [CEA] – issuing environment protection license based on an initial environmental examination [IEE] report for a' Type A' quarry
iii) Archeological department – issuing no objection letter
iv) Forest department – issuing declaration that the land is not in forest area unless the land is covered by a private ownership deed

The contractor has made requests to all authorities as required by law. The Employer has issued letters requested by him to the contractor.

However, for various reasons delays and suspension of production had occurred, during the process due to the actions of the authorities.

There is no record of other quarry sites, being available or not in economical haulage distance of the construction works is unknown. Neither party showed availability or non- availability of such a quarry. The DB not being an ongoing one the decisions were taken on submitted information only.

The Engineer refused to consider the delay in material supply caused by delay in approval of the quarry as a reason for EOT for construction, stating that the JV agreement of A & Q is a separate commercial venture by the two parties and had no reason to be considered as a part of the construction contract.

The matter was refereed for adjudication by a three- member panel after construction – on 'ad-hoc basis'.

Contractor's contention:

1. There was undue delay in the approval process.
2. There were disruptions of production due to intervention by some authorities.
3. The quarry was used only for the construction requirements not for selling to others.
4. Therefore, the contactor has a right for extension of time [EOT] for completion.
5. The additional royalty imposed by the forest department should be reimbursed, as done for other contracts at other locations in the same project.

Engineer's reasoning for not recommending EOT and issue of a letter by the employer to forest department:

1. The quarry production is not a part of construction work; quarry materials can be purchased from suppliers.
2. The quarry belongs to an outside party.
3. Obtaining license is the contractor's responsibility and requested letters have been issued by the employer.

Preliminary objection by Respondent/Employer [R/E]

- According to paragraph 4 of sub clause 20.1 the contractor has failed to submit to the Engineer, a fully detailed claim with all supporting particulars of the basis of the claim.
- The Engineer in response to the contractor's request has considered the contractor 's letter dated 9 February x+1 and 13 March x+1 do not specifically mention under what clause the contractor requested for EOT for 3 months.

Therefore, the respondent pleaded to dismiss the claim

The **DAB did not consider the preliminary objection** based on the grounds

- The approval process is much longer than a reasonable procedural delay in issuing a quarry license.

- A period of about 01year delay and suspensions in the meantime and allowing when appealed to the higher- level officers had not warranted to make a full detailed submissions to be made at the first request.
- **Though the contractor's request had not been technically perfect, delay of 01 year for the quarry approval is a substantial period for a contract of 21 months duration as agreed**

Respondent/Employer's defense:

1. The quarry was operated by a JV of A & Q [a quarrying company] not by the JV of A&B who is in contract with the Employer.
2. So, it is a private commercial enterprise between A and Q without any bearing on the construction contractor A&B's works.
3. If the JV agreement was signed by Q with the JV of A&B the quarry operation can be considered as, one made for the purpose of the construction contract.
4. JV of A&Q for quarry production can be for commercial purposes.
5. The claim has to be considered under; 1)
   1) sub clause 2.2. [permits, license or approval
   2) sub clause 8.4 [extension of time for completion]
   3) sub clause 8.5 [delays caused by authorities]

5.1 Under sub clause 2.2

5.1.1 As per the sub clause "the Employer shall [when he is in a position to do so] provide reasonable assistance to the contractor at the request of the contractor, approvals for any permit, license or approval to obtain under 1.13

5.1.2 The Respondent /Employer [R/E] has done so by issuing requested letters

5.1.3 Such issuance of letters does not mean the JV of A&Q is a JV of A&B with Q for the purposes of the construction contract

5.1.4 Such letters were issued only to assist the contractor

5.2 Under Sub clause 8.4

5.2.1 Out of the 05 subsections of sub clause 8.4, (d) and (e) are relevant

5.2.2 Sub Section (d) states "Unforeseeable shortages in availability of personnel, or goods caused by epidemic or governmental action". This situation has not caused any shortage in supply of material

5.2.3 (e) reads "any delay, impediment, or prevention caused by or attributable to the Employer, Employer's personnel or Employer's other contractor within site". No such impediment or prevention has occurred in this contract

5.3 Under Sub clause 8.5, three (03) conditions for EOT entitlement is given

5.3.1 "If the contractor has diligently followed the procedures laid down by the authorities" The contactor failed in this

5.3.2 The contractor has violated these and found punishable under different counts proven by the correspondence submitted by the complainant/contractor [C/C] himself

5.3.3 The C/C has neglected procedures, despite regular advice by the Employer and the Engineer of implications involved in using land belonging to forest department and close to archeological remnants

5.3.4 The C/C has failed to assess the implication of upgrading a' Type C' quarry to a' Type A' quarry

So, the contractor has failed to diligently follow procedures as to satisfy (a) of sub clause 8.5 and hence (b) and (c) too.

6. Regarding the reimbursement of additional royalty paid to the forest department

6.1 The C/C has failed to establish that the quarry was operated by the contractor as defined in sub clause 1.1.2.3 of the contract i. e. "the contractor means the person(s) named in the contract or the letter of tender accepted by the Employer or the legal successor entitled to this person(s)

Complainant's reply:

1. The Engineer issued only one letter to CEA.
2. For all other matters the contractor got letters from the ministry offices in Colombo and is thankful to them for the assistance given more than the officers directly dealing with the project.
3. The partners of the JV are jointly and severally responsible to ensure the successful completion of the contract as per contract agreement. Therefore, the lead partner of the JV taking action on behalf of the others too, to form a JV with company Q to arrange required quarry material should not be considered a commercial venture outside the contract.
4. The JV of A&Q has not sold material to outside parties. The Respondent has never stated so during construction and has not proven that the C/C has done so.
5. There was an environmental officer in the Engineer's office. He has visited the site many times. In any one of the progress reports or at progress review meetings, no violation of environmental or other rules were recorded during construction. So, the contractor not following the procedures diligently is only a statement without any proof.
6. The quarry site is 500m away from the archeological remnants. This is stated in a letter by CEA when recommending for operation of the quarry. This place is not in gazette as an archeological site.
7. Quarry production was suspended by the Divisional Secretary on allegation that the archeological remnants will be affected. But on contractor's request when the regional officer of the archeological department visited the site, he decided otherwise and quarry operations were allowed. So, the contractor violated procedural requirements is a distortion of facts. Due to this the contractor lost production time unnecessarily at the quarry.

8. The contractor failed to assess the implications of operating a' Type A' in forest land is not acceptable because this quarry was in operation for above 10 years as a' Type C' quarry. Upgrading a' Type C' to a' Type A' is less complicated than opening up a new quarry in forest land.
9. The reason for not issuing the same letter issued to other contractor in the same project in different locations is the JV agreement with quarrying company Q not being with JV partners A&B, is a lame excuse as explained in 3 above.

DB decision:

1. The contractor should be allowed 120 days EOT **without cost**
2. The employer should issue the letter to the forest department to reimburse additional royalty as for other contractors.

DB analysis and reasons:

1. I f there is no operating quarry in the vicinity to provide the required quarry materials in required quantities, within the required period, the contractor has to establish a suitable quarry.
2. The C/C has pointed out the need for establishing a' Type A' quarry which has not been disputed.
3. Establishing a new quarry or upgrading the existing a 'Type C' quarry to a 'Type A' quarry is the contractor's choice. It has not been proven that the choice is wrong.
4. Selecting a quarry in the forest land had been questionable to the R/E. But the fact that, this 'Type C' quarry had been in operation for more than 10 years without a problem, is not disputed by the R/E.
5. As per contract, JV partners A&B are both responsible jointly and severally for successful completion of the contract. As such the lead partner forming a JV with quarrying company cannot be rejected.
6. There was no proof that the JV of A&Q was selling quarry material to outsiders during the construction period. So, considering the quarry operation as a commercial venture outside the construction contract is not fair.
7. Therefore, any delay in quarry production is a delay for the construction works.
8. Supply of materials and upgrading the quarry is contractor's responsibility and he has done it.
9. Assisting to obtain permits licenses and approval is Employer's responsibility and the requested letters had been issued.
10. The approval process involves four authorities and each organization has caused delay.
11. There is a certain time period required for processing a permit license or approval from state organizations, especially when more than one organization is involved.
12. However, the process taking nearly 01 year is a fact to be considered for extension of time
13. The Divisional Secretary has suspended operations in the quarry in July x+1, and Assistant director archeology has allowed resumption of operations after a site visit in August x+1. So, the alleged suspension of being close to an archeologically sensitive items is unfair.

14. In September x+1, the Director General of CEA has cancelled the environmental protection license [EPL] but on appeal, the secretary to the ministry has allowed again in November of the same year. If the cancellation is withdrawn on ministry request without any inquiry or investigation, there cannot be serious reasons for the cancellation. Neither party has forwarded documentary proof of such serious investigations.
15. However, the claimant has not established that there were no quarries to supplement the supply from a 'Type C' quarry without wasting time and energy to upgrade the existing quarry to a' Type A'. Also, the C/C had not shown non availability of suitable private land with rock suitable to open a new type A quarry.
16. The respondent too failed to establish the contrary to the facts in 15 above.
17. So, the contractor is eligible for reasonable EOT at no extra cost to the employer except proportionate reduction of delay damages.
18. The Employer need not issue letters to state organizations to reimburse any royalty that the contractor has to pay.
19. However, the R/E admitted that similar letters were issued to other contractors in the project and the reason for not issuing the same is that the JV with quarrying company was not signed by the JV of A&B which is the contractor for the construction contract.
20. DB decided that the company Q signing the JV agreement with the lead partner is sufficient and running the quarry as commercial venture during the construction period was not proven.
21. So, the DB considers it fair and reasonable to issue similar letter for this contract too.

Lessons:

1. The contractor should discuss the delay at progress review meetings and requested the project staff of the Employer and the Engineer to call coordinating meetings, when delays are felt unusual, without blaming at the end that only one letter was issued by the Engineer.
2. Successful completion of the project is the responsibility of the Employer's and Engineer's representatives too. They too could have initiated coordinating meetings to find means of sufficient other quarries to cater for the need, if a 'Type A' quarry license is that difficult to be obtained.
3. The contractor appears to be more at ease with the ministry than the site officials and regional officers of the relevant authorities. May be the contractor is influential in Colombo and at higher echelons than at regional level.
4. Refusal to issue the same letter issued to other contractors on a flimsy ground, is unfair. It reflects on the Engineer 's impartiality or not reading the contractor's responsibility in a JV

Post script: Parties accepted DB decision

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Chapter 8

The dispute:

The dispute is on price fluctuation calculation and an error in selecting indices for the materials as per 'ICTAD bulletin' of construction statistics

The background:

The contract conditions for this contract are under bank harmonized edition of the contract conditions of FIDIC 2005

The bitumen grade to be used in this contract had been given as grade 60/70 under special specifications

In a road construction contract, there was an error in selecting the indices for bitumen and road base aggregates. The contractor questioned this when price fluctuation payment was made in IPCs. He has not noted this before. The matter was informed to the Engineer who informed the contractor that, it was the contract condition you have agreed, under particular conditions of contract and the Engineer has no power to change the agreed contact.

The Engineer adjusted the input percentages twice when the contract price changed due to variations as per contract sub clause 13.8. But did not change the indices given in the contract for bitumen and road base aggregates

The matter was refereed for adjudication by a three- member panel after completion of construction – on 'ad-hoc basis'

The contractor's contention:

1. The selection of price indices for bitumen grade 60/70 is that for bitumen grade 80/100 and the same for road base aggregate is the index for concrete aggregate[metal] in the contract document
2. The cost for earth materials is not considered in calculation of weighting percentages for inputs in the contract document

The Engineer's stand during construction:

The Engineer cannot change agreed contract conditions and hence no change can be made in input percentages in the contract for interim payments

The Claimant/Contractor [C/C]'s claim

1. The calculation of weightings percentages for inputs is not the same method given in the "ICTAD formula method" ICTAD/ID/07 publication
2. The selection of price indices for bitumen grade 60/70 is that for bitumen grade 80/100 and the same for road base aggregate is the index for concrete aggregate[metal]

3. Input percentages should be recalculated considering 1 & 2 above based on quantities in statement at completion, and cost adjustment due to price fluctuation has to be paid.
4. Interest should be paid for the delay in payment of the cost change due to the C/C, as per contract
5. The contractor should be provided with the details of calculation of input percentages by the Engineer

Respondent/Employer's [R/E] defense:

1. The input percentages are changed twice by the Engineer as per sub clause 13.8, when variations occurred. There is no need to change again as the contractor wants
2. The indices selected for bitumen used in the contract document for bitumen and road base aggregates are not the corresponding indices for the materials. But these had been agreed by the parties. Any change now will be a change to the contract for the advantage of the contractor.
3. The contractor should study the contract document before submitting the bid. An experienced prequalified contractor could have raised this matter at the pre-bid meeting for clarification.
4. Under sub clause 3.1. b the Engineer has no authority to relieve either party of any duties, obligations or responsibilities under the contract
5. The adjustment of cost under sub clause 13.8 in particular conditions of contract does not mention of ICTAD or a method given in a publication of ICTAD. It is in the contract data the index references are given as from ICTAD. So, there is no need to follow any method proposed by ICTAD. Though ICTAD has issued a guide for construction works in Sri Lanka, it has no relevance for this contract under FIDIC conditions of contract.

The Complainant /Contractor's reply:

1. Earth wok, in this contract, is of a significant value. But has not been considered in the calculation by the Engineer in adjusting the weighting percentages. So, the basis of calculation is wrong.
2. The R/E has mislead the DB stating that the earth used is from roadway excavation but in fact a remarkable percentage is borrowed material in addition to roadway excavations.
3. The sub clause 13.8 contains this statement, "*the weightings for each of the inputs of cost given in this clause **shall be adjusted** if, in the opinion of the Engineer, they have been rendered unreasonable, unbalanced, or inapplicable as a result of varied or additional work, already executed or instructed under sub clause 3.3 or **for any other reason".***
4. Sub clause 1.8 of general conditions state*" If a party becomes aware of an error or defect in a document which was prepared for use in executing the works, the party shall promptly give notice to the other party of such error defect".*
5. So, the contractor's action in this regard is justified.

DB's reasons and decision:

1. Recalculation of weightings of cost inputs

1.1 This document has been accepted by all the bidders prior to tendering their bids for this construction contract. If there were flaws or lapses in the document these have to be clarified prior to submission of tenders.

1.2 The C/C has accepted the weightings based on BOQ quantities which are made known to all bidders and this is part and parcel of the contract. It is the responsibility of the bidder to study the contents of the document and verify

1.3 DB is of the view that such changes need not be done unless sub clause 13.8 is applicable in the opinion of the Engineer, as a result of variations and additional works

1.4 As the Engineer has revised the weightings based on prices one month prior to the base date in the second revision, a further revision is not required

1.5 The C/C 's request is NOT upheld

2. Application of relevant indices for bitumen grade 60/70 and road base aggregate

2.1 The sub clause 13.8 (v) in particular conditions states" *the indices mean the monthly indices published by the institute for construction training and development for different inputs"*

2.2 The special specifications require the use of bitumen grade 60/70 and road base aggregate 20 or 40 mm. These are major cost significant items among others

2.3 Already adopted indices are not relevant for these. So relevant indices should be used

2.4 The C/C's request is up held to use the relevant indices for the two items

3. Correction of price adjustment shall be after recalculation of the weightings for cost inputs

3.1 **The request is rejected as explained in 1 above**.

4. The contractor should be provided with details of input weighting percentage calculations

4.1 The request is rejected based on explanations in 1 above

5. Payment of price fluctuation difference and interest for delayed payment

5.1 If there is any under payment due to the contractor arising from the DB decision such payment should be made with corresponding cost of interest as per the contract

5.2 The request is upheld subjective to 5.1 above

Analysis [by the author]

1. Though standard methods are to be followed in calculating the weightings for input costs, the person who does this calculation should understand the principle very clearly.
2. Sub clause 13.8 in general conditions has been deleted entirely and new one is introduced in particular conditions.
3. The contractor's argument is that this substituted clause is the one proposed by ICTAD clause in ICTAD.SDB/02 contract document and should be followed exactly as given in the ICTAD publication ICTAD/ID/07. This is contractor's wrong understanding
4. If the general clause in FIDIC and the clause in particular conditions are studied, there are similarities but the two are not the same. When FIDIC conditions are used in other countries the same clause in FIDIC general conditions is used but the indices may be as per accepted publications of those countries or internationally accepted ones.
5. Some such comparisons of 13.8 in the general clause and the particular clause are shown below.

5.1 The selection of price indices after the date of completion basically means that price fluctuation payments shall continue at the same rate. *But General conditions indicate the use of indices applicable 49 days prior to the expiry of date of completion or current indices whichever is more favourable to the Employer;*
BUT
the particular conditions mention to use current indices as applicable to accepted date of completion including extended period as per sub clause 8.4

5.2 Regarding adjustment of weightings both clauses are similar but general conditions [GC] state *" as a result of variations" only* whereas the particular conditions [PC] state *" as a result of varied or additional work already executed or instructed under sub clause 3.3 [instructions of the Engineer] OR <u>for any reason</u>*" The difference of the two clauses in GC & PC should be observed here.

GC allows BOQ quantities plus variations only. Variations are defined in FIDIC as 6 items under sub clause 13.1- namely changes to work in BOQ due to 3 reasons, omissions, additional works and change of sequence of execution, all of which are to be instructed or approved by the Engineer

PC allows all except changes in sequence by using the terms varied work, additional work executed [i.e. quantity changes] or instructed under sub clause 3.3 AND **for any other reason** which is not in GC

Both clauses stress the <u>Engineer in his opinion to make the adjustment</u> <u>as a result of</u> the above mentioned reasons.

6. It is noted that the sub clause 13.8 in the particular conditions is the same as the sub clause 13.7 – Adjustment for changes in cost in ICTAD /SBD/02 2007 January edition, except the last paragraph which is an additional one.
7. **So, the contractor's big sounding protests are his own imaginations. If price fluctuation payments are allowed in any contract it is similar in nature; but not exactly the same. Any clause given in a contract without ambiguity has to be accepted by the contractor once the contract is signed.**
8. <u>The Engineer's stand refusing to change the weightings of input costs is correct as the Engineer has no authority to change the contract conditions to allow an advantage to the contractor unless of course the Employer agrees for such reasonable change on natural justice. The Engineer is limited by the sub clause 3.1 of GC, even to use the phrase "for any other reason"</u>.
9. Also, it should be noted of the following sentences in both clauses

last sentence of the sub clause 13.8 of PC "*Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same shall already have taken into account in the indexing of any input to the price adjustment formula with provisions of this clause"*

Last sentence of second paragraph of sub clause 13.8 in GC. Is "*To the extent that full compensation for any rise fall in costs is not covered by the provisions of this or other clauses, the accepted contract amount shall be deemed to have included amounts to cover the contingency of rises and falls in costs".*

So, the provision of the sub clause 13.8 is a limited provision to allow for compensation for price fluctuation but not a full reimbursement for such change

10. The principle for introduction of this price fluctuation payment clause in any contract is based on fairness and practicality because,

- Construction contracts last for years
- Market prices change in much less periods and frequently
- Rates agreed at the beginning cannot be revised in relation to the changes in prices
- It is not practical for the contractor to work with fixed rates for contracts of relatively long periods.
- The contractor is compelled to provide exorbitant rates if this provision is not allowed. Then he may lose the tender.
- If priced low, he may not get profit. After a few failures he will not continue in construction contracts.
- People are not attracted to high- risk business. This is a way of reducing the risk due to price fluctuation.
- But there are limitations as nothing in this world can be made perfect. However, this is a risk balancing situation between the contractor and the employer to some degree.
- Providing non- adjustable elements and 90 % of cost are methods of making the contractor to bear some responsibility under overhead costs and to make the contractor aware that the exercise is not of reimbursing his cost risk.

11. The person who prepares the price fluctuation payment related clauses should keep in his mind the above facts and make a serious effort of providing a situation within the contract, based on BOQ and weightings for input costs and the relevant indices.

12. As BOQ quantities are not accurate and the weightings of inputs are dependent on the quantities and prices in the Engineer's estimate, actual construction will always end up with a different contract cost. The adjustment is allowed to be done by the engineer IF IN HIS OPINION the original weightings are inapplicable or unbalanced.

13. If the final cost is not of significantly different from the original bid price, this adjustment will not be necessary unless there are major changes in costly items. So, **it is always good for the Engineer, if such differences are seen, to calculate the input percentages based on actual quantities and rates used in engineer's estimate. This check will show whether the original weightings have become inapplicable or unreasonable. This may be informed to the Employer and with his consent only be recommended.**

14. The DB has not reasoned out the C/C's allegation that the price for borrowed material has not been considered in calculating the weightings. It should be noted that unless the borrow area is in a private land the cost of materials is only the royalty paid. The rest of the cost is machinery and labour, which have been considered for the calculation. The costs such as royalty payments, land leases etc. can be covered in the site overheads. If one carefully reads the full clause from different contract conditions available, the principle can be clearly understood and the C/C is complaining basically on minor things, because this is an approximate compensation payment and not a reimbursement of full cost

15. The genuine and obvious mistake of selecting wrong indices had been recommended by the DB to correct, though it is an agreed term strictly as per contract conditions, which the Engineer has found himself restricted.

Lessons:

1. Preparation of a contract document is a serious matter. Persons with limited knowledge and experience should not take this responsibility and create situations for disputes. The cost of this dispute is over a million rupees.
2. Mistakes do occur in any work; but scrutiny by a team and one experienced person engaged to check the entire final draft will avoid these types of mistakes.
3. Had not the irrelevant indices been given, the contractor would not have challenged the calculation of input percentages, even if they were not accurate because, a calculation error is not an obvious mistake. This contractor did not notice even the obvious wrong indices at the time of bid.
4. The bidders make mistakes by not noticing relevant important points and sometimes become the lowest bidder due to these. But at the time of execution when expected profits are not gained, effort is made to cover cost by claims and non-sound arguments too are raised. These are totally unwanted situations in construction projects.
5. The best and very important thing for bidders is, to engage experienced persons to study the document before pricing the bid. Scrutiny of the particular conditions of contract and particular specifications at least is essential, as any company with experience is aware of the standard contract conditions and standard specifications.
6. The Employers should hold pre- bid meetings for clarifications and bidders should make use of these meetings.
7. In making claims or in contractual writing, it is essential for the writer to read the relevant clause(s) and be double sure before presenting his case. “Hit and see” is a very bad approach and one loses his credibility and respect.
8. The Engineer should always be prepared to study and recommend fair payments as any non-payment or delayed payment will cost extra to the employer in the end. The Engineer should always get the consent of the employer, before writing to the contractor, for extra cost or time involved matters even if they are obvious.

Postscript: The parties agreed with DB decision

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Chapter 9

The dispute:

The dispute was on three counts.

1. The completion payment which included the change in cost of materials due to variation issued had not been made to the contractor
2. Changes directed by the Engineer/Employer were not complete as expected when the extended construction period was over. Hence payment of retention money for the first part was refused by the Engineer.
3. The corrections made by the Quantity Surveyor engaged for checking the completion claim [by this time the services of the Engineer (consultancy company) were not available] was not acceptable to the contractor

The background:

Road improvements needed in different locations due to flood damage in a district were packaged in to a single contract in a foreign funded project. A consultancy company had been engaged as the Engineer for the project. The Employer was the provincial council of the area. The agreement was signed by the Provincial Director of roads. The fund was handled and released for payments and the consultancy agreements were signed by the ministry of highways of the central government.

The contract conditions were from the fourth edition of FIDIC 1987 revised in 1992

The Specifications were "Standard specifications for Construction and Maintenance of Roads and bridges issued under Authority of General manager Road Development Authority Ministry of Highways 1989".

The contract period was 01 year and hence no change in cost for construction inputs was given in the contract; i. e. no values for input percentages were given under particular conditions of contract. The contract commenced in January in year x to be completed in January x+1

The matter was referred for arbitration at the time of Final settlement during defects liability period, to a three- member panel

Engineer's contention:

The contract agreement does not include the input percentages for cost change. Hence change in cost payment cannot be made under this contract. Reasonable extension of time had been given. The fund availability period is limited and hence EOT as requested by the contractor cannot be given.

Employer's defense:

1. The original contract period is one year and payment for change in cost is not agreed under this contract.
2. The Contractor is entitled for price escalation for the extended contract period beyond 01 year which is up to 17/07/x+1 from 05 January x+1.
3. According to the conditions of contract the contractor should submit Interim payment applications [IPA] at the end of every month.
4. From IPA 10 to 19, the Contractor /Complainant has failed to submit IPA within the following month. So, the Contractor/Complainant has regularly contributed to the delay in payments.
5. The project fund was available only up to 17/07/x+1. The contractor was aware of this fact from the beginning. That is the reason the Employer/Respondent approved EOT for the variations even without proper requests substantiated with supporting documents.
6. The Employer/Respondent was considerate of the contractor's difficulties and that is why liquidated Damages were not imposed even though the contractor continued to work beyond approved EOT period.
7. The contractor submitted IPA 17, 18 and 19 when he should have completed the works and submitted the completion claim.
8. The contract agreement of employment for the Engineer for the contract expired on 30 /11/x+2, and the contractor submitted the full price escalation claim on 18/11 /x+2. The employer was helpless in getting the certificate for which the Engineer is generally allowed 28 days.
9. The Project Director engaged the Quantity Surveyor of the Engineer for a further period and checking of the claim was completed on 18/12/x+2.
10. The Respondent/Employer rejected the delay in part release of retention money, because the Contractor/Complainant failed to complete the works and hand over, at which time only the release of retention is possible.
11. The total retention amount can be calculated only on receipt of completion claim unless the maximum retention value has reached before the completion claim due to any new rates or exceeded quantities.
12. The respondent totally disagrees to pay interest on delay in release of retention money, as the delay is caused by the contractor's delay to complete works and submit payment applications in time.
13. The contractor is responsible to prepare his claims and payment applications. So, the request to pay the cost of preparation of this claim and cost of arbitration is unfair and refused by the respondent
14. THE RESPONDENT IS AGREEBLE TO PAY ALL MONEYS DUE TO THE CONTRACTOR UNDER THE CONTRACT BUT NOT THE AMOUNTS THE CONTRACTOR CLAIMS ON HIS IMAGINATION.

The events:

- The contract commenced in January in year x to be completed in January x+1
- On 17 /09/ x, some variations were issued and the date of completion was extended to **29/01/x+1**vide a letter dated 07 /12/ x+2 [**please note the date of issue of the letter informing EOT]**
- A change order for surface dressing aggregate size and rate of bitumen spray on different road sections were issued on 10/10/x and 07/12/x.
- The contractor accepted the change order informing the need for new rates and EOT for construction period on this change, by letter dated 22/12/x. The proposed date for the extended completion was 27/11/x+1 in this letter.
- But the contractor did not propose new rates or substantiated why he needs time extension up to 27/11/x+1 with any supporting documents.
- In response to contractor's letter dated 22/12/x, EOT was granted to 05/06/x+1, by the Engineer by his letter dated 13/07/x+1.
- Same variation of surface dressing at different locations was informed to the contractor at a meeting held on 26/04/x+1; [**Please compare the allowed date of EOT to 05/06/x+1 with new change order on 26/04/x+1]**
- For this varied works, the contractor informed that he may need time up to 06/10/x+1, vide his letter 25/05/x+2. In this letter and even subsequently, the contractor had not shown reasons, as to why he needs this much of time
- By his letter dated 28/05/x+2, the Employer informs the contractor "*Reference your letter dated 05 May x+2, I hereby approve EOT for contract package 'P' up to 17/07/x+1 up to the handing over"* **[Please note the date of the letter and the only sentence in this letter]**
- Actual date of handing over is not mentioned by either party in their submissions except this reference in the letter by the Employer as in the letter dated 28/05/x+2.
- Date of submission of the completion claim by the contractor is 18/11/x+2.
- The consultancy agreement with the Project director of the ministry ended on 30/11/x+2.
- The project director who has signed the consultancy agreement to engage the Engineer has sent the checked and corrected completion claim to the Employer vide his letter 18/12/x+2.
- The Contractor/Complainant did not agree with this correction and sent his notice of dispute by letter dated 21/01/x+3.
- **A Panel of three arbitrators were finally agreed on 17/04/x+3.**
- Statement of claim for the dispute was submitted on 10/06/x+3.
- Statement of defense was submitted on 26/08/x+3.
- The claimant's response on the statement of defense was dated 09/09/x+3.
- Reply of the respondent for this was dated 09/09/x+3.
- Hearing was on 23/10/x+3.
- At the end of the hearing the parties had a private discussion and informed the arbitrators of their willingness for an amicable settlement.

- The arbitration panel requested the parties to prepare their settlement agreement and submit so that the same will be included in the arbitration award.

The award:

"According to the terms of the agreement of settlement arrived at by the parties, on 16/11/x+3 before the tribunal, the respondent first offered and the claimant agreed to accept the full final settlement of the claim of the claimant as follows

1. A sum of rupees "x" millions and value added tax at 12% thereon to be paid on or before 30 November x+3
2. In the event of the respondent defaulting on the full payment the claimant will be entitled for interest at 15% per annum from 30 November x+3, until payment is made in full after deducting any sum already paid by the respondent.
3. In the event the respondent default in paying the full amount as agreed, the respondent should pay the cost of arbitration quantified as Rupees one hundred thousand.
4. In the event of default, the claimant will be entitled to seek enforcement of this award and the cost of enforcement from the respondent through court of law as per arbitration act of Sri Lanka

Whereas the parties have moved that the tribunal enters an award on the above agreed terms.

The tribunal enters an award on the above agreed terms under the section 14(2) and 14 (3) of the Arbitration Act and in accordance with section 24 (2) thereof, declaring that the claimant is entitled to an award in his favour in total sum of "x" million rupees payable by the respondent before 30 November x+3.

The claimant will be entitled to other reliefs as stated under, 2, 3, and 4 above in the event of a default by the respondent."

Reasoning:

1. The principle of party autonomy was considered by the tribunal for the parties to reach an amicable settlement even after referring the matter for arbitration.
2. The settlement agreement if defaulted can be enforced by court of law, when the same is given as an arbitration award without referring to a long legal process as a fresh case.

Lesson:

- The Engineer's stand to refuse payment of price escalation under the contract is correct. But issuing variations during the second half of the construction period [less than 3 months to the date of completion] has given an opportunity to the contractor to ask for EOT beyond a remarkable period of time over 01 year.
- The Engineer /Employer has to be careful on issuing variations to ensure that the change does not make openings for the contractor to make additional claims due to EOT, new rates etc. if there are restraints to extend time and pay additional amounts.
- If the variation is essential, before issuing the variation, the cost and time implications should be studied and agreed in writing with the contractor.
- When the Employer knows the non- availability of fund after a certain date, if the work is likely to be extended beyond that date, other source of funds should be arranged or additional work should not be given or the construction work should be curtailed suitably.
- Letter writing should be prompt, at least within 14 days of an event or receipt of a claim notice, letter or reply. Please note the delays of events [**refer the list of events**]
- Neither party has substantiated the claims or events in making or refusing the requests for additional time or payments or new rates, together with the request or subsequently, even months afterwards.
- The acceptance of IPA 17, 18 and 19 by the Engineer is questionable without any remark or refusal. No such supporting document was submitted by the Employer, though the Respondent/Employer brings late submission of IPA as a defense.
- The Engineer could have directed the contractor to make a request for release of first half of retention, when the work was taken over.
- The Employer is reasonable to agree to pay change in cost of construction inputs for the extended period due to variations. But these should have been studied and discussed before issuing variation orders.
- It appears the contract administration by the Engineer and the management of the contract by the Contractor had been with very minimal attention. Attention, vigilance or coordination from both sides appears to be lost until problems arose.
- Even arriving at an amicable settlement had not been tried before referring to arbitration.

Post script:

Both parties being known to the author, the following information were available to him after the award

1. The parties worked very cordially for a long period until further extension of time was not agreed and the Engineer stopped replying on EOT.
2. The surface dressing method was changed to suite the site requirements because these have not been thought at the award of the contract due to hurried preparation of documents to make use of unused fund in a previous project completed before the floods.
3. Payment for change in cost was not included in particular conditions, without providing a table for input percentage values because the fund availability period was limited.

4. Agreed payment after arbitration, was made from special funds obtained from SL government.
5. Delay in payment was partly due to delay by the contractor's rate of progress, as well as the changes given because; full payment cannot be made without completing the work. Without knowing approximate value and date of final payment, requesting additional funds from treasury was not possible
6. The Engineer did not inform imposition of liquidated damages from the first date of entitlement and the contractor took matters easy. But both parties knew each had contributed for the delay.
7. The parties had mutual respect. No one expected to trouble the other. When the contractor could not receive money as expected, causing cash flow problems, he sought the service of a claim consultant as the QS department of the contractor was not strong.
8. The claim consultant only studied documents and made the best possible claim to make maximum advantage, without considering the effect of fighting a claim damaging the relationships and the actual situation at work.
9. This led to a dispute situation and the arbitration was begun.
10. When he understood payment of interest for delay in action will place the provincial officers in a bad situation and considering the fact that, so far, no liquidated damages had been imposed, the Complainant/Contractor felt the need for amicable settlement, because winning a claim is not the end, and he needed to work with the state sector.

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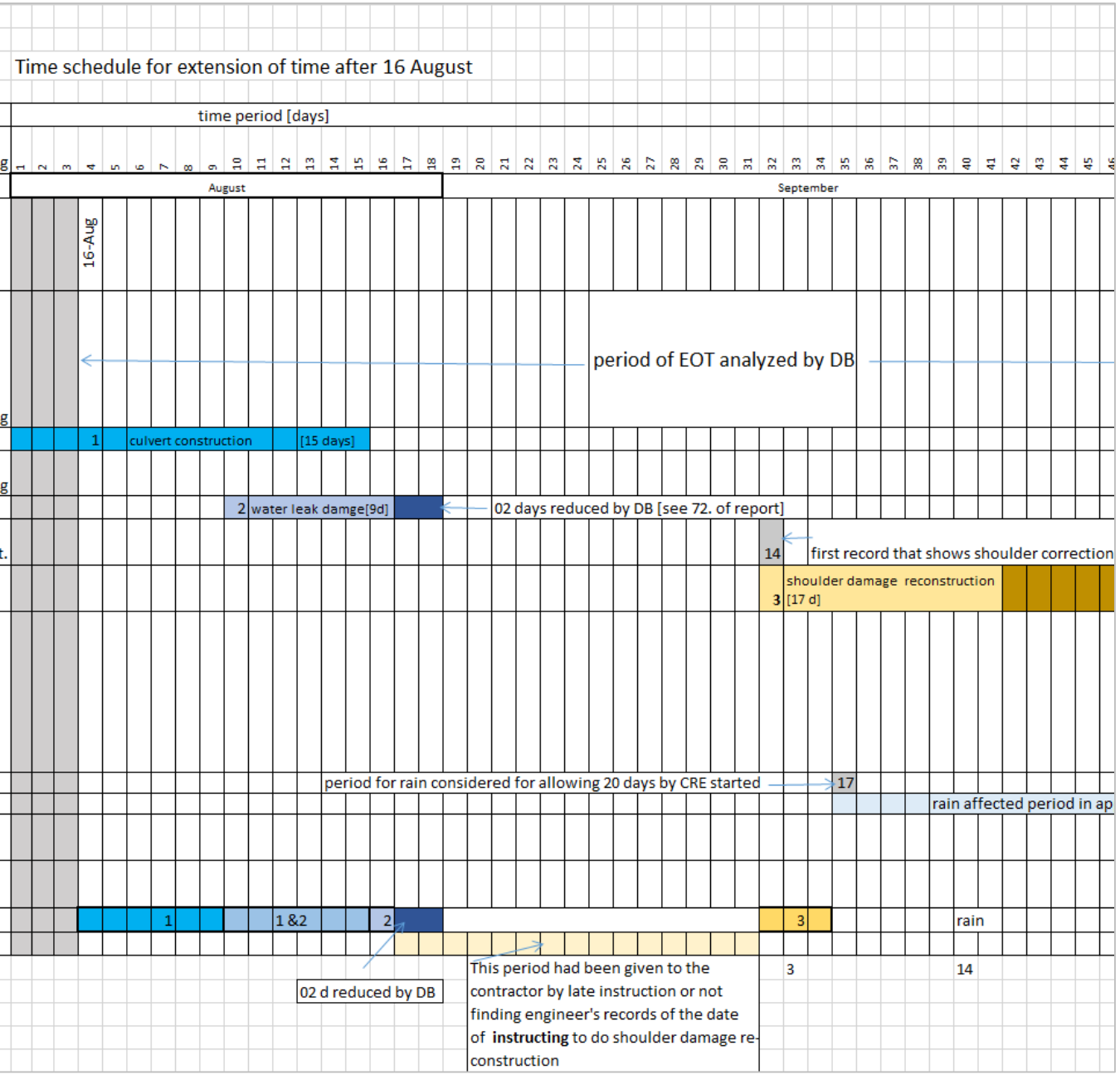
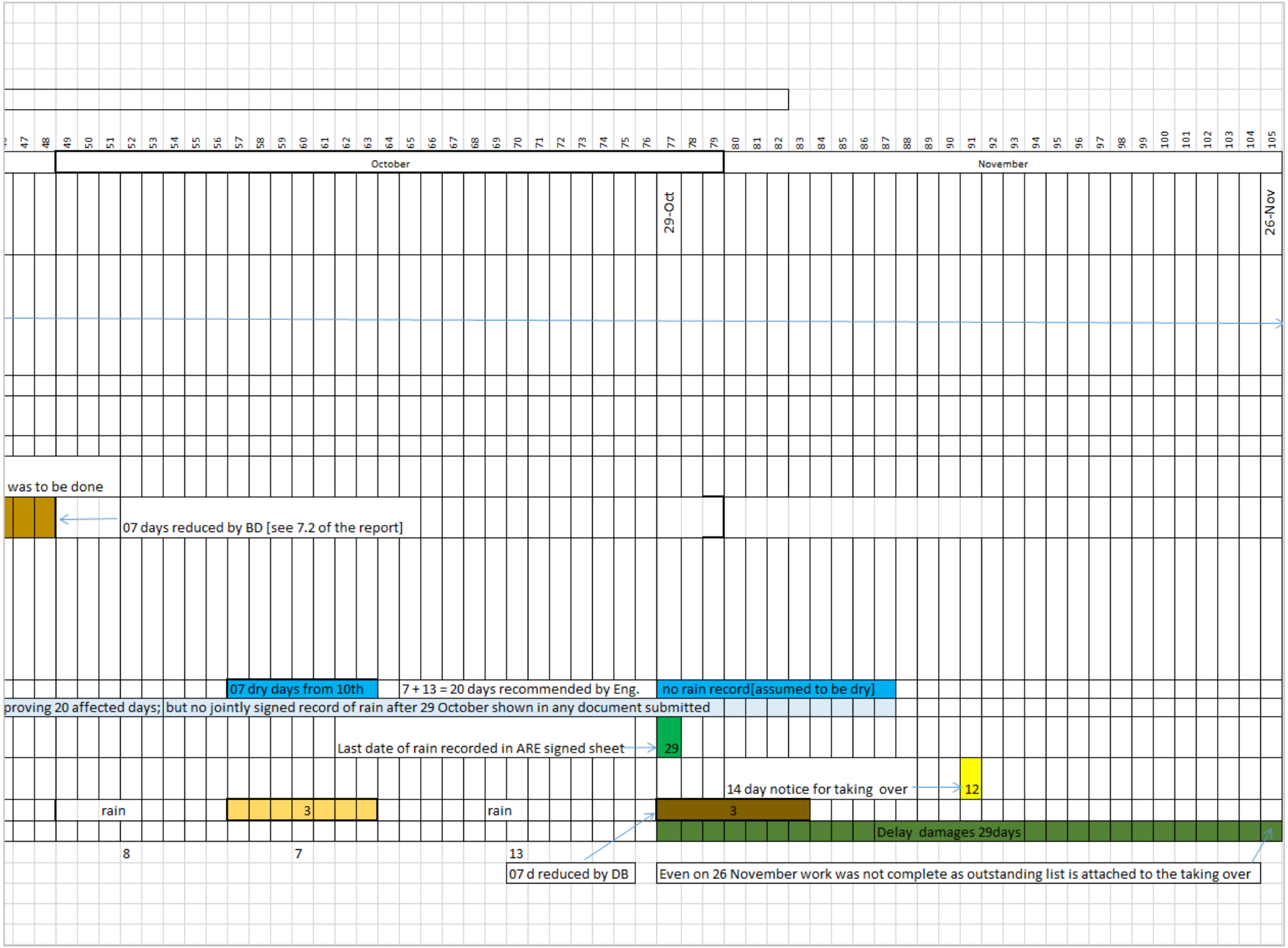
Annexures

ATTACHMENT 3

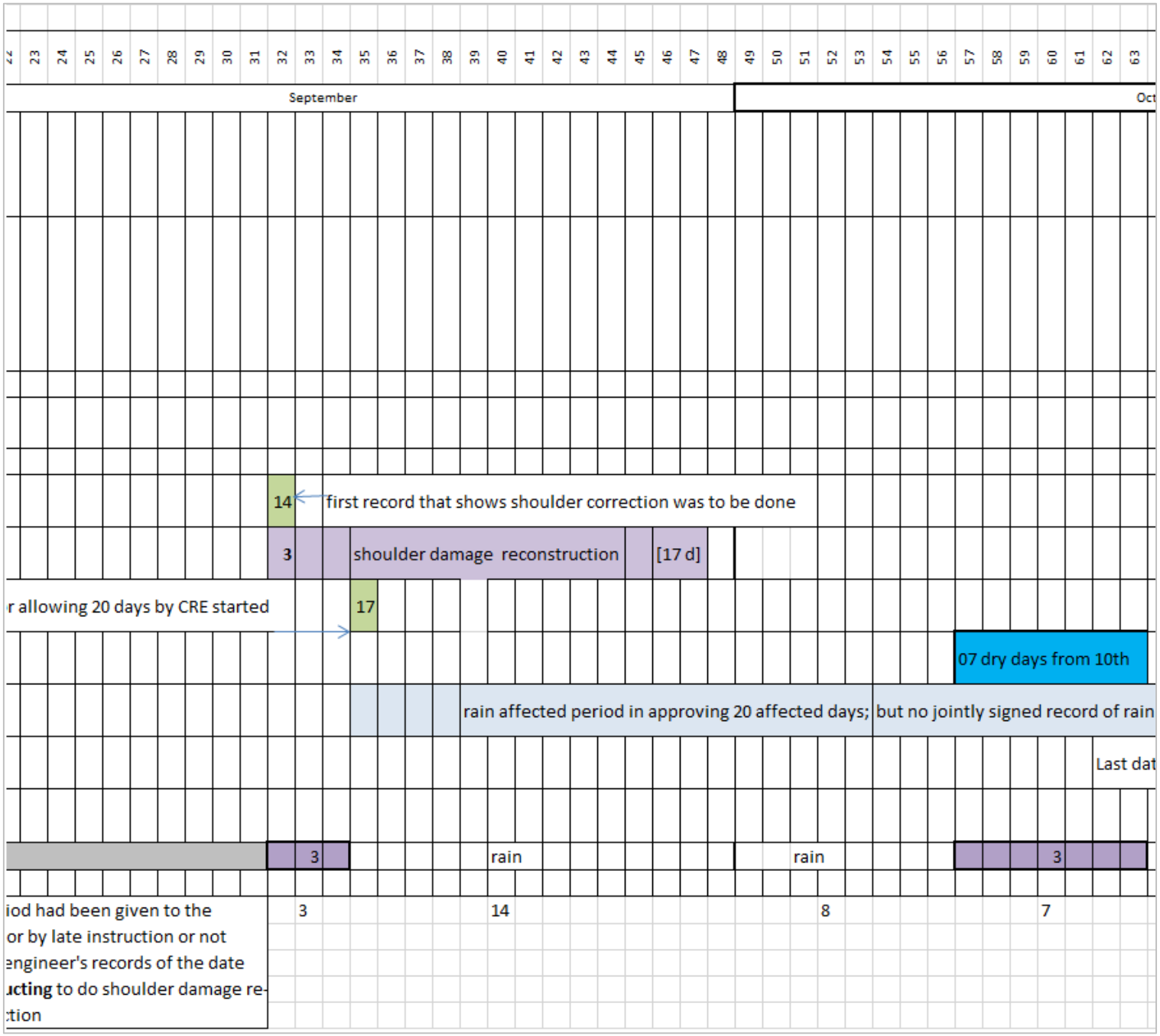
Time schedule for extension of time after 16 August

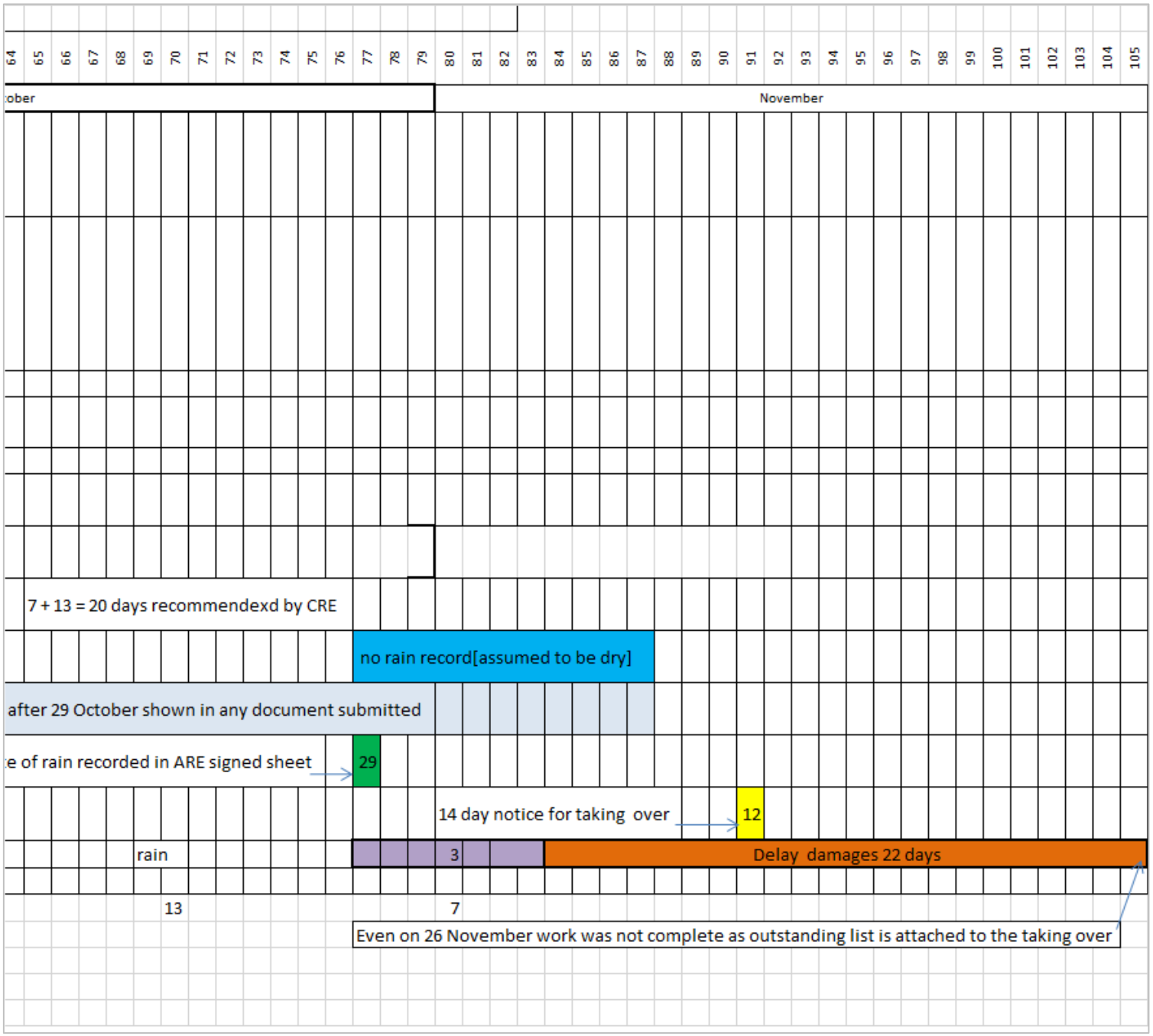
No	Description	start date
1	Contractual EOT **accepted by both parties**	16-Aug
2	Extensions recommended but refused by the Employer considering ex-gratia period offered cannot be extended	
2.1	construction of culvert at 3 + 140 for which instruction had been given on 13 August by letter -4923 dated 16 January 2009 in response to contractor's letter 187 dated 24 December 2010 (15.5 days)	13-Aug
2.2	Pavement rectification damages caused by water leaks [same reference] (9.5 days)	22-Aug
2.3	Shoulder damages due to heavy rians [same letter reference] (17.5 days) less 01 day for part allowed in out standing work list	29- Oct.
2.4	Rainy days during 17 Sept. to 08 November assessed as 20 days [same letter by CRE] However shoulder rectification has been identified and considered started by 29 October Thus 20 days can be from 29 October & not from 8 Novemebr	
2.5	Taken over on 26 Novemebr with an outstanding list	




October
November
29-Oct
26-Nov
was to be done
07 days reduced by BD [see 7.2 of the report]
07 dry days from 10th
7 + 13 = 20 days recommended by Eng.
no rain record[assumed to be dry]
proving 20 affected days; but no jointly signed record of rain after 29 October shown in any document submitted
Last date of rain recorded in ARE signed sheet
29
14 day notice for taking over
12
rain
3
rain
3
Delay damages 29days
8
7
13
07 d reduced by DB
Even on 26 November work was not complete as outstanding list is attached to the taking over

No	Description		start date	time period [days]
1	Contractual EOT **accepted by both parties**		16-Aug	
				August
2	Extensions recommended but refused by the Employer considering ex-gratia period offered cannot be extended			
2.1	construction of culvert at 3 + 140 for whichinstruction had been given on 13 August by letter 2-514-110-L-4923 dated 16 January 2015, in response to contractor's letter MRCH/CP2KD11/GEN 187 dated 24		13-Aug	
	December 2014 (15.5 days)			1 culvert construction [15 days]
2.2	Pavement rectification damages caused by water leaks [same		22-Aug	
	reference] (9.5 days)			2 water leak damge [9 d]
2.3	Shoulder damages due to heavy rians [same letter reference] (17.5		29- Oct.	
	days) less 01 day for part allowed in out standing work list			
2.4	Rainy days during 17 Sept. to 08 November assessed as 20 days [same letter by CRE] However shoulder rectification has been identified and considered started by 29 October Thus 20 days can be	Rain considered		period for rain considered fo
		Dry Days		
		Affected period		
2.5	Taken over on 26 Novemebr with an outstanding list			
				1 1 &2 2
				This per contract finding of **instr** construc


September
Oct
14
first record that shows shoulder correction was to be done
3
shoulder damage reconstruction
[17 d]
r allowing 20 days by CRE started
17
07 dry days from 10th
rain affected period in approving 20 affected days;
but no jointly signed record of rain
Last dat
3
rain
rain
3
iod had been given to the
or by late instruction or not
engineer's records of the date
cting to do shoulder damage re-
tion
3
14
8
7


64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105
ober
November
7 + 13 = 20 days recommendexd by CRE
no rain record[assumed to be dry]
after 29 October shown in any document submitted
e of rain recorded in ARE signed sheet
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14 day notice for taking over
12
rain
3
Delay damages 22 days
13
7
Even on 26 November work was not complete as outstanding list is attached to the taking over